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EDUCATION

Spotting the villain

On the job :

dr. r. k. poddar dr. vanaja iyengar prem kirpal
dr. p. m. bhargava dr. d. m. nanjundappa prof. rais ahmed
dr. l. k. jha dr. amrik singh justice p. n. singhal
prof. d. n. sinha dr. madhuri r. shah prof. p. n. srivastava
dr. malcolm s. adiseshiah dr. g. seetharam prof. iqbal narain
prof. upendra baxi prof. ramlal parikh prof. s. n. mehrotra

"In our country, since Independence, education has been a hereditary affair and a prerogative confined to some 3 per cent of the total population representing only some three million small families and a half-a-million large families. In this group every child shall go to school, and through high school into a university, and get a job after getting a degree. This would be true also of their children and their grand-children. All of those who are likely to read this piece and those who have written for this issue of *Yojana*, would belong to this category as would every government servant of any category. In the case of the remaining 97 per cent, the chances are that their children will not go to school at all, or drop out in Class I, Class III, Class V or Class VIII. A small percentage might manage to 'somehow' go through high school and even get a degree but they would have been so deprived all through their educational career that they would not be able to compete in open competition with the children of the privileged 3 per cent."

DR. P.M. BHARGAVA

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Rao Garu, 5 mts. please!

It's nice seeing you, Mr. Narasimha Rao, guide and preside over the human resources development affairs in the country when this vital issue of New Education Policy is at hand. As things go, an awesome job now faces you—on the one hand is our resolve to improve quality of life by 2001—yes, all in midst of steep poverty and rampant corruption—and on the other, this World Bank depressing warning that we are heading towards earning the dubious distinction of having more than 50 per cent of world's illiterates amongst us by 2001. A frightening situation, to say the least, but surely not beyond redemption if we could, somehow, muster total commitment to fight the menace.

It is in such circumstances that we go bit unconventional and invite your attention to two vital issues: firstly, the imperative need of creating appropriate climate to honestly implement policies; and, secondly, some hard thinking on raising of finances, good enough, to hit the targets.

Before we spell out the issues, let's seriously ask ourselves..how long we propose to continue finding alibi in our society to cover our own misdeeds; what do we mean by saying that the ultimate determinant for success or failure in education is the commitment of society to it; is society any different from the ruled and the rulers; who, in a society, stops rulers to organise living in the true interests of its citizens? And, why do we talk of financial constraints when it is in our own hands to sensibly fix priorities and accordingly earmark allocations. Quite uncomfortable questions but all the same very relevant!

Wittingly or unwittingly, we seem to have become prisoners of our own doings. We ourselves have created a situation where men of goodwill feel isolated. We know the way our bureaucracy, particularly at the top, goes about its job. It is not only indifferent but callous as well. It has, over the years, mastered the art of manipulating matters and thrust blame on top leadership. It is active at times but only when it suits its designs. It's no more a secret that for each corrupt politician there thrive a dozen bureaucrats in any situation. If this be the scenario, we might succeed here or there, but certainly not reach our targets. Incidentally, to make things sure let's see that

both designing and implementation of educational programmes remain in the hands of only dedicated educationists, directly answerable to you, and not elsewhere as hitherto.

It is high time we reversed this situation. The going is good and conducive to creating a climate appropriate for some honest work. Already, some beginnings have been made in some areas. Let's, as well, attempt in others. To promote good sense and discipline among ourselves, it seems necessary to put an end to this culture of consumerism. For good reasons, film censorship was brought under your control and it seems only logical now to rope in the omnipotent electronic media, T.V. and Radio, to effectively cleanse up our environs.

Bear with us, Sir, we now reach the crux of the matter. Funds, and more of them, we must have to root out illiteracy. Our main target, obviously, are the rural poor, a great majority of whom are our landless agricultural labour. Their true lot is not any unknown and the crucial issue of land to the landless continues to haunt. The minimum wage to them remains only a pious wish. And if life goes such, what makes u aim at universalising education !

Surely, our limitations stand in our way to do wha is obvious. Why not then explore the alternative. W suggest taxing income from agriculture, right now to be used exclusively for education. We say, on th authority of K.N. Raj Committee on Taxation of Agri cultural Wealth and Income (1972), that we ca easily net in an additional revenue of about Rs. 70 crores now. Perhaps, you could take up and convinc your colleagues on the necessity of the move, in th circumstances. If it's not found feasible, as an alter native, why not, on Gandhian lines, convince or cajol our rural rich to donate at least five high schools i each district. Alright, if this is also not foun practical, which is very likely, let's decide and impos education cess to raise enough funds for universalis ing education.

Incidentally, why not also consider dropping th prefix 'model' from our project of model schools i each district, as it seems to cause some apprehensio

—Chief Edito

Education must take blame for today's scenario

Following is the text of an interview with Dr. P M Bhargava, a noted educationist-scientist.

CHIEF EDITOR : The document 'Challenge of Education—a policy perspective' has been in circulation for a countrywide debate for some months now. Do you agree that the document as such is a realistic assessment of today's education system and the direction ensivaged is in line with our requirements to enter the 21st century as a vibrant and dynamic nation ?

P.M. BHARGAVA : No, I do not agree. The document is insufficient because it does not take into consideration, amongst others, the following important points :

(a) The document does not recognise that in the hierarchy of problems the country has faced in the recent past, and is facing today, education (along with water and power) would rank at the top. A country is as vibrant or dynamic, to use your very appropriate terminology, as its school education system is. One only has to look at the school education systems of countries such as France, United States, Britain, Japan, Germany and the USSR, to recognise the validity of this statement

(b) In our country since independence, education has been a hereditary affair and a prerogative confined to some 3 per cent of the total population representing only some three million small families and half-a-million large families. In this group every child shall go to school, and through high-school into a university, and get a job after getting a degree. This would be true also of their children and their grand children. All of those who are likely to read this piece and those who have written for this issue of **Yojana**, would belong to this category as would every government servant of any category. In the case of the remaining 97 per cent, the chances are that their children will not go to school at all, or drop out in **Class I, Class III, Class V or Class VIII.** A small percentage might manage to "somehow" go through high school and even get a degree but they would have been so deprived all through their educational career that they would not be able to compete in open competition with the children of the privileged 3 per cent This is precisely why the reservation system continues even after four decades of independence, and why we have just 10 per cent as many high schools as we have primary schools, when the number of high schools should be the same as the number of primary schools In our estimate not more than 10—20 thousand persons move from the education-wise unprivileged group **to the educationally privileged group per year; this changes neither the complexion nor the value system of either group. Therefore, education—or the lack of it—becomes the greatest divider in our country, of far greater import and impact than reli**gion, caste or any other factor.

(c) Today, knowledge and information are the most important assets of any individual, group or society. Disparity in knowledge and information creates the first condition for exploitation. Such disparity is the hallmark of contemporary situation in India. Consequently, education—an important source of, and necessary for knowledge and information—has turned into a tool of exploitation of the unprivileged 97 per cent by the privileged 3 per cent Unless the edu-

cational opportunities are the same for every one—that is, school education upto the high-school level (10 years of formal schooling) has been universalised and democratised—we cannot call ourselves a democracy. The present system of education makes a mockery of democracy in our country. The document does not recognise this situation—the absolutely crucial role of education in meeting the goals and objectives enshrined in our Constitution.

(d) It is obvious from what I have mentioned above that we must universalise and democratise school education. Therefore, we should have only one kind of schools in the country—the State (that is, Government-run schools). We can do so only by abolishing private and public schools, having a national curriculum and syllabi with, of course, sufficient flexibility to take care of the local or regional requirements. If we take care of school education adequately, college and university education will automatically take care of themselves, as has happened in other countries of the world some of which I have named above.

(e) School teachers must be recognised, in practical terms, as the single most important asset of the country. Therefore, their emoluments must be commensurate with their responsibilities. They must be given a social status comparable to the role they must play in national progress. As of now, the school teachers are the worst-cared lot amongst all those in service in the country today.

C.E. : In your opinion what was wrong with the education policy that we adopted in 1968 ? Could you indicate briefly the major areas of thrust where we failed miserably to achieve our objectives ?

P.M.B. : Did we really adopt a policy in 1968? Indeed, there was no policy. One can call only that a policy which is implementable, and the implementation of which shall achieve socially desirable goals which would take us forward. This was certainly not so with the so-called 1968 policy. It was, unwittingly, a strategy to maintain the status quo, that is, the use of education as a tool of exploitation rather than a tool of progress—of real progress for all in the country, and not just a chosen few.

C.E. : Education today is also blamed for breeding inequality in society. I mean in view of the prevailing systems of public education and the government schools. Education, especially the higher education, is becoming costlier and beyond the reach of the lower middle class and the poor. How this disparity could be removed ?

P.M.B. : You are right. Education has been the single-most important agent in breeding inequality in society in our country since independence. I have already indicated some of the steps one might take to reorient education so that it may serve the goals that it ought to, and remove the disparity mentioned above. For example, we should have only one kind of schools in the country—the State-run schools—and we should worry about school-education more than about higher-education and ensure that all the ingredients that are required to make schools work and deliver goods, are put together. These ingredients are not a mystery, they stare us in our face (I have myself, amongst many others, discussed them in an article in **New Quest** some years ago—1979, Vol. 15 (May-June) pp. 147-158).

C.E. : Now about the decision to set up model schools in the central sector in every district to enable the meritorious rural children to get quality education irrespective of their economic status. How far this will help remove disparity ?

P.M.B. : I cannot concur with this decision. It will only help consolidate the rift between the privileged and the unprivileged. Every school in the country should be a model school. Schools for the gifted have meaning only if the base is large and the system such that everyone has the same opportunity, irrespective of his origins, so that the gifted children are derived from the entire population and not from a very small sub-set of it. In the latter case, the "gifts" would only be utilized for exploitation and not for national progress. The proposed model schools will, therefore, become another tool in the hands of the privileged to exploit the unprivileged.

C.E. : The document highlights the need for integrated programme of education for whole of the country to achieve the goals of economic, social, political and cultural development. For this it suggests a common core curriculum. Then what kind of such a curriculum should be ? Should it follow the traditional method of teaching or we need refashion it to inculcate rationality and humanism and through developing scientific temper among our people ?

P.M.B. : The idea of a national core curriculum is excellent. I had proposed this in my above-mentioned article in **New Quest** several years ago, and have since then reiterated it on many occasions. As regards the basis of the curriculum, I am attaching a note (appendix) that I had once written for a Committee of the NCERT which I had chaired. This note briefly summarises the purpose of education and the parameters on which the curriculum might be based.

C.E. : Closely related to this is the concept of the so-called composite culture that we have been trying to sell all these years, to do away with differences among our people. Has this concept helped us at all in bringing about the synthesis of minds and forging unity and harmony in our society ?

P.M.B. : No, we do not do away with destructive, devisive and fissiparous tendencies by empty words, and that is what we are trying to do. Indeed, has anyone ever attempted to define precisely and unambiguously, in operative terms, what we are trying to get through education, what the objectives of education in the country are ? The terms "synthesis of minds, unity and harmony", in the context in which you have used them, mean very little to me. For me, they are derived values and not the primary ones. The purpose of education should be to inculcate primary values such as those listed in the note mentioned under item 5 above. Once this purpose is served, our problems will be half-solved. What we, indeed, should wish the product of the educational system to be, is an individual committed to a set of values. Differences elsewhere, for example, in what we eat, or how we eat it, or in regard to modes of behaviour, must not only be tolerated but positively encouraged. Progress occurs only through conflict arising out of differences, but of course, for this purpose to be served, the conflict must be healthy.

C.E. : According to the document, education has to be considered as a core sector to produce the persons with the desired attitudes and capabilities to help faster economic and social development. In your view, has education been able to fulfil this objective ? Could we attribute today's scenario of terrorism, communal clashes and revivalism to the failure of the education to play its due role ?

P.M.B : No, education so far in the country has not fulfilled the objective you mentioned. In the ultimate analysis, education must take the blame for today's scenario you stated.

C.E. : There has been demands in some quarters that education should be placed in the Union List of the Constitution primarily to enable the government to bring about uniformity in the education system. Would this help ?

P.M.B. : I agree, but the question is "what kind of uniformity ?" This has to be very carefully thought of.

C.E. : The document attributes failure of the 1968 education policy mainly to non-availability of sufficient resources and lack of measures to restructure education according to that policy. It suggests, among other things, raising resources through increased fees, community subscriptions and contributions from the departments using the manpower output of higher education. What exactly, you think, is needed to be done in this regard ?

P.M.B : I must disagree that we have not had sufficient resources to put in for education—and, I mean school education upto Class X stage. If you wish to see the exact figures, I have mentioned them in the above-mentioned article in **New Quest.** What has been lacking is the social-political-economic will on the part of decision-makers. Who really wants to democratise and universalise school education ? Those **who wish to do so have no power !**

C.E. : There has been mixed reaction to the proposed delinking of degrees from jobs. Some describe it as an elitist solution while others feel it would relieve pressure of increasing number of undergraduates in case avenues for training and assurance of jobs are provided. What you would like to say ?

P.M.B. : Degree *must* be delinked from jobs. That was the whole idea of the 10+2+3 formula—that, 2/3rds to 3/4ths of the students after high school (hoping that every child *would* go through high-school) would go into the vocational stream, and the remaining 1/3rd or 1/4th into the academic stream. The objective of those who go into the vocational stream (which would *not* lead to a university degree) would be to perform specific jobs; there education *would* be linked with jobs. The objective of those who go into the academic stream will be to acquire knowledge because history has told us that acquisition of knowledge for knowledge's sake is extremely important for human progress. This, indeed, is the argument for investment in basic research. At the university level the emphasis must be on excellence. Linking degrees with jobs must, by definition, compromise this excellence, which will always make our country lag behind in educational standards and in overall accomplishment in comparison to many other parts of the world. Even in socialist countries, higher education—that is, what would correspond to our university or degree education—is not linked with jobs.

C.E. : Some universities have been scenes of regular lawlessness and indiscipline mainly because of politicisation of their campuses. Why this phenomenon is on the increase ? What in your view needs to be done to eliminate this phenomenon and improve the university environ ?

P.M.B. : What else would you expect when we have, in most universities, the majority of students not interested in learning, the majority of teachers not interested in teaching, and often incapable of it, and an administration that is ignorant of the requirements of education, and in the country a political system which prostitutes education for its own ends. To remedy the situation, the first step would be to universalise and democratise primary education. As I have already said, if we take care of school education, university education will take care of itself on account of the compulsions created from below, as has happened in other countries

APPENDIX

A framework for preparation of revised Curricula Syllabi and Text-books for school classes

(Classes I—X)

Notes

(1) This framework was prepared for the Editorial Board for Integrated Science for Classes VI-VII appointed by the NCERT in early 1976. It was approved by the Editorial Board at its meeting on 17th April, 1976, at New Delhi.

(2) This framework was intended to be equally applicable, in principle, to all the subjects and areas which may by covered in school education (namely, the sciences, the social sciences, the languages, mathematics, fine arts, work experience and physical culture) I had personally requested the previous Director of NCERT, Dr. Rais Ahmed, to circulate to the other Editorial Boards of NCERT, but I do not believe it was done This suggestion was made to ensure that different books were not written at cross-purposes to each other.

I Objectives of Education

(i) inculcating and propagation of values and concepts (Section II) to which the nation is committed.

(ii) acquisition of knowledge which will allow one to understand and cope with the environment in which we live, to arrive at decisions conceived in reason and objectively, and to evaluate decisions made by others at all levels (e g community, national and international) that we have to reckon with in our every-day life

(iii) acquisition of skills which would allow one to earn one's livelihood by engaging in a constructive, productive or otherwise useful job for which the individual may be best suited, which he enjoys doing, and in which he can excel

(iv) Through what has been mentioned in the preceding sub-sections, to serve as an important tool for social change.

II Values and Concepts which the Curricula, Syllabi and Text-books ought to attempt to inculcate and propagate

1. The need for understanding the environment we live in (including, science technology, law, government, political systems, economics and planning) Knowledge alone allows one to understand and cope with the environment we live in, to arrive at reasonable decisions and to avaluate decisions of others.
2. The method of science (as the only way to acquire knowledge) Objective and national thinking, clear thinking Open-mindedness Amenability to reason Construction of arguments Problem solving and decision making.
3. Understanding and knowing our past
4. Importance of qualification and abstraction, and of estimation and accuracy
5. Need to work. Dignity of labour (all jobs are interesting). The meaning and value of leisure.
6. The intimate relationship between education and work (both are interdependent and continuous processes)
7. Human dignity Respect for others and for their rights Social consciousness (the concept of common good) Not to make an exception of onself to a rule
8. Secularism National integration Equality (e g of sexes, castes, religious groups, etc) Problems such as untouchability Internationalism (Need to understand the world geography and history) Interdependence of nations Difference between discrimination and making a distinction. Impartiality.
9. Socialism. Fight against exploitation Social justice Attitude towards personal property.
10. Democracy.
11. Concept of a pluralistic society
12. Peace
13. The concept of organisation (organisation vs. chaos).
14. The concept of freedom (freedom vs. constraints; rights and privileges vs. duties and obligations). The right to question.
15. Creative and innovative thinking. Healthy curiosity; where to go to find an answer to a question.
16. Modernity Contemporancity Amenability to change (e.g acceptance of simple labour or drudgery saving devices).
17. Efficiency Ability to organise ones thoughts and actions.
18. Commitment to excellence
19. Concern for problems of the future
20. Family planning.
21. Conservation of natural and other resources, and prevention of waste (e.g. of water, power and food).
22. Attitudes towards ostentatiousness and show
23. Environment and pollution.
24. Ecology.
25. Cleanliness, including personal cleanliness (the scientific view).
26. Health and sanitation (the scientific view)
27. Aesthetics.
28. Good nutrition (the scientific view).
29. Team work, group accomplishment and cooperation.
30. Attitude towards wining or losing in a competition, recognition of merit and excellence greater than our own.
31. The scientific attitude towards obscurantism, superstitution, dogma and other irrational beliefs.
32. The scientific attitude towards customs, convention and tradition.
33. The scientific attitude towards age and authority.
34. Personal qualities.—endurance, courage, compassion, consideration, kindness and helpfulness (not to be derived from patronage); modesty; truthfulness, honesty; faithfulness and loyalty; tolerance; confidence (arising out of knowledge); fairness, self-discipline and self-control; sense of responsibility.
35. Codes of behaviour.

III Other Guiding Principles for preparation of Curricula, Syllabi and Text-books.

(i) applicability all over the country—as far as possible.

(ii) built-in scope and methodology for change and modification.

(iii) Maximum possible relevance to the environment in which the individual concerned is living.

(iv) an integrated approach (as little subject-wise classification as possible)

(v) problem, question and concept orientation rather than topic orientation

(vi) clearly established relationship to one of the objectives stated in the preceding section (values, relevant knowledge and skills) (the relationship thus established should, for example, be able to justify the values and concepts listed in Section II above)

(vii) easy followability by teacher and by others (the syllabus, while allowing for flexibility and change, should be sufficiently detailed).

(viii) built-in guidelines for preparation of lectures (for example, the syllabus should generally suggest the title and content of the various lectures) The number of periods for the subject in each class should be kept in mind (for example, there may be 255 period for science in Classes VI to VIII per year) It may be advisable to present the syllabus in sections, so that one section comprising one topic or a set of related topics, could correspond, roughly speaking to one lecture or a set of a small number of lectures

(ix) built in suggestions for instructional aids and materials

It's how Dr. L.K. Jha would like us to take it

Following is the text of an interview with Dr. L.K. Jha

CHIEF EDITOR : The document 'Challenge of Education—a policy perspective' has been in circulation for a countrywide debate for some months now. Do you agree that the document as such is a realistic assessment of today's education system and the direction envisaged is in line with our requirements to enter the 21st century as a vibrant and dynamic nation ?

Dr. L. K. JHA : Well, I think, first of all I welcome this kind of a debate because it does not contain a set of announcements of government decisions. It throws open to the entire people of India, particularly to the educationists, the opportunity to comment on the thoughts. I think the analysis of things, as they are or they have been, is fairly accurate and the issues which it poses are important, genuine issues. I am on the whole in line with the thrust presented in the Paper.

C.E. : In your opinion what was wrong with the education policy that we adopted in 1968 ? Could you indicate briefly the major areas of thrust where we failed miserably to achieve our objectives ?

Dr. JHA : Well, I do not know that I can pinpoint the reasons for the failure of the 1968 policy, or what its defects were But in actual fact the main problem in the implementation of educational policy, as I see it, is this : that the public demand is for one kind of institutions, while what the educationists and planners feel should be the kind of educational system and the kind of allocation of resources between one type of education and another. This is quite different. And there is a gap—gap between the supply to be organised according to policy and the demand which originates in the people, in the community itself. We must get at the root of this problem. We must recognise that even the people who send their children to school, to colleges, their ultimate aim is not just to imbibe culture, which was true of the elitist education, but their aim is to have a job-orientation Now, therefore, the demand has been much more for colleges and degrees, which leads to the possibility of employment in government, in business because everywhere people look for graduates. So parents who want to send their children for education really hope to send them to a college ultimately and to get them a degree. Now, therefore, resources go much more to higher education. Primary education or literacy, which educationists see as very important, the people themselves do not think there is much in it. If I am a farmer ploughing my field, or if I am a cobbler or a blacksmith, if my son is going to do what I am doing, what difference would it make whether he is literate or not. So, for the primary level of education there is no appeal to the public. And State governments which are answer-

able to the people in the elections, don't stick to their demand, they prefer to meet the demand from the people rather than follow the advice of the educationists.

C.E. : Education today is also blamed for breeding inequality in society, I mean in view of the prevailing systems of public education and the government-run schools. Education, especially the higher education, is becoming costlier and beyond the reach of the lower middle class and the poor. How this disparity could be removed ?

DR. JHA : Well I don't think I subscribe to the view that education leads to inequalities. Inequalities result in a distortion of the educational system. The richman's children can afford better education. But it is not because of the system in the economic field but because of the economic system as it is. Now one weakness, which from an egalitarian point of view I notice and must dwell on, is that in order to bring education cheaply within the reach of all, we keep our college fees so low. In fact, all college students are subsidised. Which means that even richer parents get subsidised education. We don't have that kind of resource We complain of shortage of resource for education but this is a wasteful use of resource. I would much rather see a system in which the fees are raised but the number of scholarships is so large that those who can't afford to pay the full cost of education, and those who are poor are subsidised by lower fees or by scholarships. So, we have to reduce the consequences of disparity in income levels which is a part of the economic system and not think that there is some pattern of education which will reduce the disparity by itself.

The view is sometimes expressed that the more costly type of education which may be qualitatively better but which the rich only can afford, should not be encouraged because it would accentuate disparities. I do not agree with this. The inequalities between the rich and the poor, which undoubtedly exist and are matters of concern, have to be tackled on the economic plane by appropriate measures. However, to the extent that income disparities exist—and they do in all countries—inevitably the rich will be able to afford many things which the poor cannot. I see no reason why we should tell the rich that they can live in better houses, eat better food and enjoy a vast number of amenities which most people cannot afford but they cannot educate their children better than the poorest. If there must be some people who are much richer than others, I would rather see them spend their money on giving a better education to their children than on many other less desirable things. Of course we should take steps to ensure that the brightest children among the poor are also able to get the best education and can even find ways in which the facilities which the rich alone can afford are also made available to them.

C.E. : Now about the decision to set up model schools in the central sector in every district to enable the meritorious rural children to get quality education irrespective of their economic status. How far this will help remove disparity ?

DR. JHA : Well, I think it will, because the rural children or places where there are no really good schools suffer from a double handicap. Not only is the better education, specially those provided by the public schools privately run, more costly but if they have to send their children to hostels then the cost of living of the students in a city becomes so much higher which poor parents cannot afford. Therefore, by bringing better schools within the proximity of the place where the people are, namely in every district, we are in fact reducing inequalities, not creating inequalities.

C.E. : The document highlights the need for integranted programmes of education for whole of the country to achieve the goals of economic, social, political and cultural development. For this it suggests a common core curriculum. Then what kind of such a curriculum should be ? Should it follow the traditional method of teaching or we need refashion it to inculcate rationality and humanism through developing scientific temper among our people ?

DR. JHA : Well, I think education must lead to a development of the scientific temper, by which I mean simply the capacity to think for yourself and not to take the views of someone in authority as being necessarily sacrosanct because it has come from a past or present figure of great national importance.

Now, if students are given, even in the interest of having a common core, a set of beliefs to subscribe to unthinkingly, then we don't get the result. But if we encourage them to think on their own as a scientist does, I mean scientists always reject the theories of others before them, however great, without any feeling of discomfort. Newton's ideas, great as they were, Eienstein came and questioned them and blew them up; no hesitation. But in other spheres, in non-scientific area, there is always tendency that something which has been said by some great man at some time, now we must accept that as a profound truth, and if you want to change it then you start translating it into different ways according to your own like. This is hypocrisy. Let us, therefore, promote straight thinking, objective thinking and independent thinking. And then give them the tools to think. They must know language, they must know mathematics, they must know how to think logically and correctly, but let them think on their own.

C.E. : Closely related to this is the concept of the so-called composite culture that we have been trying to sell all these years, to do away with differences among our people. Has this concept helped us at all in bringing about the synthesis of minds and forging unity and harmony in our society ?

DR. JHA : You see, culture is not something which can be sold and that which is sold is never culture. Culture is something which grows. And, therefore, we can not have a synthetic culture where a mixture is made by some people sitting in their own laboratory or art studio But it is the exposure to divergent cultures, diversity of cultures and then the flowering of a new unity and a new synthesis. So, it is this quality which is important In other words, you can't pre-cook the food and ask the students to eat it. You must teach them how to cook, give the ingredients. Then only you will have creativity and it is with creativity that you get a synthesis of culture. I mean, we have got diversity and we should never try to make an artist of one part of the country who sees nature in one way to adopt the same vision as another great artist in some other part of the country, or some other period of time That creativity must be preserved. So in the name of synthesis, there should be no regimentation.

C.E. : According to the document, education has to be considered as a core sector to produce the persons with the desired attitudes and capabilities to help faster economic and social development. In your view, has education been able to fulfil this objective ? Could we attribute today's scenario of terrorism, communal-clashes and revivalism to the failure of the education to play its due role ?

DR. JHA : Well, I would answer it this way Today there is a great deal of frustration among the educated. And because of this frustration you get all the unhealthy trends in social life which we notice. But it is not something which can be cured only by looking at the education system. You have also got to see the links between the educational system and the economic system Now an attempt has been made to forecast the kind of job opportunities in different skills that will arise. Now this can never be very accurate. But even if they are, how do you influence students in different families that exact number goes to each kind of faculty of study. each makes its own choice. They, therefore, choose that in which there is a widest range of option open. Similarly, education is a State subject Now the employment opportunities within the State may be of one kind. Countrywide, there will be different pattern Since people do go and work in other States, they cannot have an educational system which will produce the exact number of people according to their own State's requirements when some students will come from or go to other States, some will work elsewhere. So my view on this has been that recruitment to various vocations should be at as early a stage as possible. And if the man is assured that he has been taken for a job, whether it is the Government or in private sector or in a technical capacity or in doing something with your hands or in running a hotel or anything else. Here I have got to ensure one thing that it is my career; then I will take the course necessary to acquire the necessary skills. But if I don't know that I am going to work in a hotel, why should I try to take a course in it ? If I take a course first and then I don't get in then I have no use. I have studied hoteleering and I have no use. Therefore, they all think let's go and get a degree. Therefore, I have been in favour of delinking degrees from recruitment. Recruit them in earlier stage and then give them degrees in subjects which are relevant, which are meaningful and have some bearing on the kind of responsibilities a person will have. I don't mean train him to be a narrow-minded person. There are many jobs where you want broad-minded people Give them the broad-minded education but give them with a sense of purpose : not that somebody studies Arabic and does administration when there is just no link between what he has studied and what he is doing

C.E. : There has been demands in some quarters that education should be placed in the Union List of the Constitution primarily to enable the Government to bring about uniformity in the education system. Would this help ? What are your views ?

DR. JHA : Look, certainly, I would agree that there is a large area of education where the planning has to be on the national plane and not on the State level. Because, as I said employment opportunities are not linked within the State. So an overall national view is needed. On the other hand, at the lower levels the local needs are much important. Unless you pay attention to them the locals won't come. Now, if you want to make a man in agricultural area send his children to school then he must feel that there is a link between what the school is teaching and the kind of vocations which are being carried on around the neighbourhood, unless he is hoping to go high and go elsewhere. So, there is room for both. But the need for the Centre to play a significant role, specially for the higher levels of education, is considerable. But, having said that I don't want a political controversy to develop on the subject when the substance and objective of education and its reform gets seconded to questions whether which party is in power in which State and how it effects its future and their prospects. Therefore, I do not want to press this from the Centre's side, but I would be very

happy if the consensus in favour of a larger role for the Centre in the educational system emerges at the State level.

C.E. : The document attributes failure of the 1968 education policy mainly to non-availability of sufficient resources and lack of measures to restructure education according to that policy. It suggests, among other things, raising resources through increased fees, community subscriptions and contributions from the departments using the manpower output of higher education. What exactly, you think, is needed to be done in this regard ?

DR. JHA : First of all, it is true and it will always be true that there has not been enough money for education. But we are short of resources. Every department feels the pinch for money and while each of them is prepared to say 'mine is a higher priority than others', so do the others say. So, that is a mug's game. Now I am much more concerned with the fact that so much of the resources allocated gets misapplied in the sense of creating surpluses in some fields and deficits in others. In areas where you have surplus the money spent has been a waste. So, better planning and coordination as well as motivation of the public is needed. Certainly, I would add that if you recruit at an early stage, then the wastage which results from higher education being given to more people than can be usefully employed by it gets reduced. Secondly, the low fees, I have already said, is a great mistake. We must charge a normal economic fee. Thirdly, I would also say that education is not something which is in the public sector in the sense that only the State can finance it. Even before Independence, Indians used to set up educational institutions. Why should we not encourage more private contribution coming to the educational system, taking care to avoid the kind of exploitation and malpractice which has sometimes gone with what is called the capitation fees. But if you ensure that the educational standards are maintained, then an institution can run charging a sufficient amount of fee to be self-supporting and not relying on Government grants, etc. So we have to think for ways not only of getting more money to education from the Centre or State Governments but also from other sources, and at the same time to see that there is no loss due to wastage.

C.E. : There has been mixed reaction to the proposed delinking of degrees from jobs. Some describe it as an elitist solution while others feel it would relieve pressure of increasing number of undergraduates in case avenues for training and assurance of jobs are provided. What you would like to say ?

DR. JHA : I have been talking about delinking for a long time. I came to that conclusion when I was Governor of Kashmir and I went to a backward area. The people there said, 'don't give us primary schools, give us colleges', and their explanation was that 'Government jobs go to graduates and for us to send our children to get a degree means sending them to Jammu, Srinagar or some big town which we just cannot afford and the students get alienated as a result of living in towns. Give us a college here'. Now, the compromise between that is to recruit at the plus 2 stage. Then that much standard of good education can be assured all over the country. And then the employers undertake their further education whether in a straightforward degree or in a technical course or a specialised course, with the knowledge now that there is a close fit between the demand and the supply of specialists in different fields as well as of generalists. Of course, you can't prevent others also. Even then they study at their own risk. They know that they have not been recruited and the post will not come to them. So, if they can afford to study when it is a free country, why should they not ? But to my mind the delinking of degrees appears to be a very worthwhile step to improve the whole tone of the educational system. And the campus of universities and colleges will then have the serious-minded people. Most of them may have been assured jobs. Others have come because they want to study a subject, get a higher degree, teach, do research and so on. So, in that case we shall come back to the stage when a Vice-Chancellor can function as a Vice-Chancellor and not as a Superintendent of Police.

C.E. : Some universities have been scenes of regular lawlessness and indiscipline mainly because of politicisation of their campuses. Why this phenomenon is on the increase ? What in your view needs to be done to eliminate this phenomenon and improve the university environ ?

DR. JHA : First of all, as I have just now said, it is because the students see an uncertain future for themselves that their sense of frustration comes in. They also feel, I think, that they should get involved in politics—this is one vocation which these days is becoming as much of an opening as any other. So they want to get into the act at a young age. But it is a pity that the kind of politics which comes to campus is of a partisan kind. Even the elections show all the weaknesses of electioneering and the political play. It is a matter where, I would hope, all political parties will agree upon how far and in what manner they should spread politics in the campus ; where they should join the line and let the students think for themselves without becoming committed to the ideology or dogmas or rituals of any political party. □

It's an exercise in haste !

Dr. R.K. Poddar.

Dr. Poddar feels the authors of the document 'Challenge of Education -a policy perspective' have wrongly assessed today's dismal education scene and suggested some hasty measures in their impatience to bring about improvements to satisfy 'the ruling elite'. He says mention has been avoided of important guidelines given in the National Education Policy of 1968 because these run counter to the policy perspective in the document. Dr. Poddar wants the idea of setting up 'model schools' in each district for poor meritorious students to be dropped as, according to him, this will ultimately tend to serve the interest of the rural and urban rich. He is all for bringing education on the State List of the Constitution and replacing UGC by a National Council on Education headed by the Prime Minister.

THE DOCUMENT ENTITLED, "CHALLENGE OF EDUCATION—A POLICY PERSPECTIVE", is an apparently genuine outburst against the dismal picture of our current educational scene. Authors of the document, however, have fixed responsibilities for this unhappy situation in wrong places. In their impatience for "improvements" according to the perception of the ruling elite, they have suggested some hasty measures; these, I feel, do not hold any promise for better educational opportunities for the vast majority of our people.

the policy that was not implemented !

The present educational system, as is well known, is a continuation of what was introduced during the British period, albeit with some changes brought about from time to time, latest one being through the National Education Policy (1968). Let us recapitulate a little as to how this came about. The last Education Commission consisting of 17 members which included, among others, experts from the USA, USSR, UK, France and Japan, under the Chairmanship of a very distinguished physicist-educationist, Prof. D. S. Kothari, diligently carried out the herculean task of reviewing the whole of our educational system from primary to university stages. It worked for two years (1964-66), interviewing nearly 9000 persons, scrutinising aobut 2000 memoranda and holding a number of

seminars|symposia, and finally submitted a voluminous report of about 1000 printed pages. This report was openly and exhaustively debated by the entire academic community as well as by Parliament. The National Education Policy incorporating the main recommendations of this report was unanimously adopted by Parliament in 1968. Some of the recommendations and guidelines of the Kothari Commission as given below are worth recalling :

(a) India is in transition from a society in which education is a privilege of a small minority to one in which it could be made available to the mass of the people (Section 1.17);

"Authors of the document, however, have fixed responsibilities for this unhappy situation in the wrong places. In their impatience for 'improvements' according to the perception of the ruling elite, they have suggested some hasty measures; these, I feel, do not hold any promise for better education opportunities for the vast majority of our people".

(b) science should be made a basic component of our education and culture (Section 1.21);

(c) it is the responsibility of the education system to bring different social classes and groups together and thus promote the emergence of an egalitarian and integrated society. But at present, instead of doing so, education itself is tending to increase social segregation and perpetuate and widen class distinction (Section 1.36);

(d) if these evils are to be eliminated, we must move towards the goal of 'common school system' of public education which will be open to all children, adequately maintained and free of charges (Section 1.38);

(e) education, at all stages, must be imparted through mother tongue|regional languages (Section 1.51); and finally

(f) our education system, without neglecting our rich heritage and tradition, must assimilate the great humanistic ideas thrown up by the French Revolution, Karl Marx and the European Enlightenment (Section 1.77).

feel sad that the authors of the new document do mention these guidelines. Or, perhaps they want us forget them because none of them has yet been ised in full; some of their policy prescriptions, if pted, would invariably run counter to the recomidations of the Kothari Commission.

et us take the problem of mass education. The 1981 nus Report and Fourth All India Education Survey conducted by the NCERT, reveal a distressing picture : 40 per cent of our primary schools have no roofs, about two lakh schools do not have blackboards, 1.65 lakh schools have only one teacher, while about 70 per cent of students drop out before they reach the last year of the primary stage.

education of masses neglected so far

Neither the Kothari Commission nor the National Education Policy (1968) visualised such a situation. It is the outcome of utter neglect of mass education by the Union Government during past four decades. During these years it has annually spent only about 1 per cent of its budget on education, while the Kothari Commission recommended a minimum of 6 per cent. Of the 905-crore outlay during the Sixth Plan period, Centre's contribution is a mere 54 crore, i.e., about 7 per cent. Thus the Centre has practically abdicated its responsibility of imparting education to the masses and passed it on the shoulders of the States which do not have adequate funds to bear this onerous burden. So, the failure on the mass education front is not due to absence of a "good" policy but because of unwillingness of the Centre to allocate sufficient funds for it.

why not launch 'food for education' programme ?

Any honest attempt to improve our present educational system must begin with boldly tackling this issue. The new document does not assure us that by the 21st century none of our primary schools is going to be without roofs and blackboards; that each school shall have at least two teachers and that there will be free supply of text-books to students and that there will be no dropouts. Instead, it advocates token investments on non-formal channels for dissemination of primary education to the masses, without any commitment on further development of existing primary schools. This approach must be rejected. We would request the Central Government to utilise its huge stock, i.e., between 30—40 million tonnes of excess foodgrains, by launching a "Food for Education" Programme; say, I Kg. of rice|wheat may be given to a child from a poor family for each day of attending his school as an insurance against dropout. Foodgrains may also be used specifically for building durable structures from locally available raw materials to house the "roofless" schools. In addition to all these, the budgetary allocation for education must be raised from 1 per cent to at least 10 per cent. We spend about 15

"The Centre has practically abdicated its responsibility of imparting education to the masses and passed it on the shoulders of the States which do not have adequate funds to bear this onerous burden".

per cent of our budget for national defence. Defence of our borders no doubt has overriding importance; but unles we spend enough to develop our human resources, we would not be in a position to utilise properly what we manage to defend.

what, model schools ?

Coming to the stage of the secondary education, we find that the new document is silent about the "Common school" system as recommended by the Kothari Commission. The latter also strongly pleaded for discontinuance of privately run "posh" and "prestigious" schools. The new document, in fact, wants a reversal of this approach and recommends instead setting up of so-called "Model Schools", one in each district by the Central Government. These schools would obviously corner all the central development funds, while the ordinary schools in which 99 per cent of our student population study would continue to languish in their present pitiable conditions. The plea that only "meritorious" would be admitted into these schools is not acceptable on two counts : (a) "merit", which would mean scores in so-called admission tests, would be purchaseable through private tution and (b) there will be at least 20 times equally meritorious students studying outside these "Model Schools". In practice these "Model Schools" will cater to the aspirations of the rural and the urban rich, with huge subsidy from the central funds which, in the ultimate count, means taxes collected from the poor. So this idea of having one model school in each district must be dropped and infrastructural facilities like, books laboratories, games and sports, etc. must be augmented in all schools without discrimination. Privatization of education and private schools must be discouraged. The old and the new rich should see reason to send their children to common schools. If they have too much money to spare, why not introduce some kind of

"The new document does not assure us that, by the 21st century, none of our primary schools is going to be without roofs and blackboards; that each school shall have at least two teachers and that there will be free supply of text books to students and that there will be no dropouts".

"'education cess" on individual and corporate earnings ?

to benefit only elites !

The idea of the "Model Schools" is reminiscent of Macaulay's ideas which were based on so-called "Downward Filtration Theory" of education. This theory is based on the belief that if a small elitist layer of the society is properly educated, then the benefits of such education will slowly percolate down to the mass of ordinary people. Such ideas were totally rejected by our national leaders; the great Bankim Chandra Chattopadhyay ridiculed it by saying that education is not water and the masses do not constitute a tower of sand. It is most unfortunate that after four decades of Independence, such century-old reactionary ideas are being revived under a different garb. Perhaps our new elites are also making some additional calculations. The new economic and industrial policies are likely to introduce widespread automation and computerisation; as a result, lesser and lesser number of highly skilled persons will be necessary. These covered positions would be more easily bagged through Model Schools| Autonomous Colleges|Centres of Excellence like IIT's & IIMS's. So, all right-thinking persons should oppose this undemocratic, anti-people, elitist idea of Model Schools.

suggested language formula, unscientific !

The new document suggests a new formula for medium of instruction in the Model Schools; English for Science and Mathematics and Hindi for social sciences, irrespective of the environment in which the school is located. This formula is not only unscientific in theory but also against the hitherto accepted guideline of the National Education Policy (1968) which *inter alia* states as follows :

"The energetic development of Indian languages and literature is a *sine qua non* for educational and cultural development. Unless this is done, the creative energies of the people will not be released, standards of education will not improve, knowledge will not spread to the people and the gulf between the intelligentsia and the masses will remain, if not further widen. The regional languages are already in use as media of education at the primary and secondary stages. Urgent steps should now be taken to adopt them as media of education at the university stage".

Thus the formula of the document is nothing but a surreptitious reversal of one of the basic tenets of our National Education Policy (1968). It should be rejected not only on this count. This is more weighty consideration : learning of a foreign language and learning various subjects through a foreign language are not the same thing; if you try to teach a youngster through a language foreign to his environment, the net result would be pushing him towards cramming, a proven obstacle to develop his interest in original and critical thinking. This topic has been so well discussed throughout the past decades that it hardly needs any re-emphasising. Our Prime Minister now-a-days is rightly eulogizing the educational ideas of the great Rabindra Nath Thakur. I wish the protagonists of the new document would kindly glance through Rabindra Nath's writings in this regard and see the futility of such false notions.

why restrict higher education ?

The document is critical of our University system. It highlights the general impression that there has

been too much unplanned expansion of higher education. We have now about 120 universities, 5000 colleges and lakhs of students. These are not really too many in comparison with developed countries. If we had no illiterates amongst us, a big country like ours could easily sustain four or five times as many colleges and universities. It is our economic and educational backwardness as well as lack of employment opportunities which have rendered much of higher education system apparently redundant. Instead of suggesting bold measures for tackling these basic issues, the document proposes, as a panacea, restriction of higher education. This would certainly not be feasible. Our people have legitimate and genuine urge for education and they hope to realise the goal of better standard of living through education. Any democratic government should respect this urge, instead of denying it. The term 'unemployable graduates' is an insult to our youth; it is another alibi in favour of restricting university education to elitism and exclusiveness based on wealth and assets, in order to lure the brighter sections of the students away from the so-called average ones. Unfortunately, as we all know, hot-house plants do not thrive well in real life situations. This should be remembered before we write off our universities for producing the so-called "unemployable graduates".

democratise educational institutions

The real problem with the universities is the lack of financial and administrative autonomy for those who really constitute the university. The idea of developing a few autonomous colleges and centres of excellence, while neglecting the problems of balanced growth of thousands of ordinary colleges and 100-odd state universities illustrates the working of the minds of our academic overlords. As these ideas have not found favour with the intelligentsia in general who wish to introduce democratic control of educational institutions in the interest of the toiling people, the right of elected representation of teachers, employees and students is being sought to be denied. This policy has already been implemented in the Central Universities and is being pushed through the UGC for imposition on all the State universities. Not being satisfied with these measures, the UGC is proposing to set up special police forces and special tribunals on university campuses and disallow elected student unions. These are ominous trends, no doubt. But these also indicate the growing attraction of democratic values and norms among India's academic community and consequent fear-complex of existing vested interests who are at present reaping the benefits of our higher education system. As you all know, West Bengal has rejected this anti-democratic approach and instead is trying to implement an alternative policy, both with regard to the management of educational institutions as well as conduct of academic programmes, by giving the teachers, students and employees full democratic right of participation. As a result of this policy, we can justifiably claim some success in establishing a healthy academic atmosphere.

It is really puzzling that the Central Government spokesmen are scared of democratic rights of teachers, while they themselves agree, at least in principle, to bestow such rights on employees working in banks and public sector undertakings. They seem to have great fascination for the principle of nomination instead of elected representation; they argue that elections are always tainted with open politics. But, even a child in today's India knows that nominations represent a worse kind of behind-the-scene politics. It is open secret how the UGC or other bodies are constituted. Only those experts who would follow the official line are nominated. State Universities are remote-controlled through the centrally-appointed Governors, who, as Chancellors, have the final say in University matters, sometimes disregarding the wishes of the state governments and the University bodies.

"The idea of having one model school in each district must be dropped and infrastructural facilities like books, laboratories, games and sports, etc. must be augmented in all schools without discrimination. Privatization of education and private schools must be discouraged".

This is how the Central Government proposes to 'depoliticise' our campuses!

Those who are quite happy with the *status quo* always advise the teachers to teach well and students to study hard without being distracted by what is happening in the outside world. But they must be living in a fool's paradise. During the days of Independence struggle as well as in the subsequent years, many of our best teachers and best students showed that they could not be delinked from the struggle of the masses for independence and a better life. I am sure, they are not going to give up the progressive tradition at the advice of some bureaucrats or ministers.

let not autonomy degenerate

I strongly feel that much of the chaos and confusion in the sphere of higher education can be removed, not by restricting, but by extending the democratic and political rights of the academic community in the management of academic institutions and conduct of academic programmes, as is being attempted in West Bengal. Autonomy of a university should not degenerate into the authoritarian rule of the Chancellor, or his chosen Vice-Chancellor; on the contrary, it must mean self-management by the elected repre-

sentatives of teachers, students and other experts constituting the Senate or the Court of the University.

why this discrimination !

Another stumbling block in the smooth functioning of our higher education system is the attempt to control it from the Centre, through the UGC, presumably on the belief that all wisdom is concentrated in Delhi. Because of the enormmity of the size and the diversity of cultures of our country, the UGC, like an one-eyed animal, is always prone to get into conflict with the State universities or the State Governments. What is needed is its decentralisation and restructuring on genuine federal principles. In practice, the UGC is mostly bogged down with the problems of Central Universities, because as per the stipulations of the present Act, it looks after the maintenance as well as developmental needs of these

"We spend about 15 per cent of our budget for national defence. Defence of our borders no doubt has overriding importance; but unless we spend enough to develop our human resources, we would not be in a position to utilise properly what we manage to defend".

Universities, while its responsibility towards State Universities is restricted to looking after their developmental needs every five years. As a consequence of this arrangement, about three-fourths of UGC funds go to Central institutions, while it distributes only the remaining funds among the 100-odd State universities The State universities have to make do with financial difficulties all the time. Teachers of central universities also get much greater amounts of allowances. Thus. there is continuous resentment and tension. Let the maintenance of central universities be the direct responsibility of the Union Ministry of Education, as the State Universities are maintained by the State Education Departments. This way UGC will be able to look after the developmental needs of all universities. Central and State, on equal footing without any discrimination.

bring education on the State List

The UGC has also failed in its other duty of evolving uniform academic standards for all Indian universities. This utopian ideal is not pursued in any other country simply because the academic standards of a university, or for that matter any other educational institution, depends on the quality of teachers and students, cultural environment and infrastructrual resources. It is next to impossible to make these factors uniform all over India. So, I would like the Central Government to respect the wisdom of the makers of our Constitution and revert "Education" from Concurrent List to the State List. Central allocations for education should be equitably distributed among the states.

replace UGC

Each State should have its own permanent Education Commission. Chairmen of State Education Commissions, along with experts nominated by Central Government should constitute a National Council on Education, in place of the UGC, which should be presided over by the Prime Minister and should also include central ministers for education, health, science and technology, agriculture, space, electronics, atomic energy and ocean development. The National Council shall monitor all activities connected with higher education in the country, and evolve national policy in this regard on the basis of consensus. It should co-ordinate but refrain from acting as the overlord as the UGC is trying to do at present.

accord teachers a better status

Finally, authors of the document tend to think that as if the teachers are the major villains causing the deterioration of the educational scene. But have we given the teachers the social status and dignity they deserve? Some Governments were even reluctant until recently to give primary teachers salary scales equivalent to their class IV staff. Compared to people with equivalent qualification in other walks of life, they still do not get their due emoluments. Now even their democratic right of representation is being taken away. They are now proposed to be screened through police verification as in the British days. So, faced with such circumstances, is it any wonder that they are obviously becoming restive and frustrated?

appoint a Parliamentary Committee

In conclusion, I feel that major formulations of the document are totally unacceptable to us in a country like ours, dedicated to mass education. As these go against all the basic tenets of the National Education Policy adopted by Parliament in 1968 and the Kothari Commission, I suggest that a Parliamentary Committee should visit all the States to elicit opinions of the academic community on this document and submit its report within one year for consideration of Parliament

No, you can't make education a scapegoat!

Prof. P.N. Srivastava

The author here doesn't agree that education has failed the country. He is convinced that both, non-implementation of the Kothari Commission Report and lower priority accorded to education in our plan frame, are responsible for today's "crisis in education." Education has been allowed to expand in an absolutely unplanned manner without providing basic facilities for it. Prof. Srivastava feels that we have to embark on a viable manpower planning to face the fast tecnnological change and develop a reliable model to absorb the growing scientific and technological manpower in the country.

IT IS A MATTER OF GREAT SATISFACTION that the nation today is involved in discussing the New Education Policy. Analysis of developments over the last two decades makes it clear that desired improvements have not taken place because of the non-implementation of the recommendations of Kothari Commission Report which culminated into the education policy adopted in 1968. Neither the resources nor the measures for restructuring were commensurate with the imaginative and purposeful thrust of the Kothari Commission report. The report was meant to be an educational plan for 20 years which ended in 1985, without seeing the light of the day. The report had made important recommendations apart from others, on agricultural education which alone were faithfully followed and implemented which definitely helped in bringing about the green revolution of which we are so proud. All other recommendations were shelved and we are facing the crisis today.

no, education isn't to blame!

It will be very unfair to say that education has failed the country. If it had failed we would not have been self-sufficient in food and amongst the ten industrialised countries of the world. The talent, capacity and capability to deliver the goods ha been developed and our political leadership has take the best out of it. India has build a capabili and infrastructure covering a wide spectrum of sc ence and technology starting from agriculture to at mic energy.

you let it expand unplann

Education is beset with tremendous problems deficient facilities, of low quality and marginal rel vance of poor recruitment of staff, of unsatisfacto relation between career and professional developme and of allround decline in discipline and efficienc The problem will have to be tackled and faced fro both the sides—one from within the education system itself and the other from financial support an political will of the government. The education h expanded in an absolutely unplanned manner esp cially since 1960's without proper facilities bei planned and created with the result that today v have a large number of graduates who are unemplo able while on the other hand, there are a larg number of positions for which suitable hands are n available. In the last three decades the cost p student has increased about five fold for primary, 3 fold for secondary and 2.5 fold for higher educatio

These figures do not tell the whole truth because of general price rise of the inputs. The naked truth is that at constant prices, expenditure per pupil for higher education shows a significant decline. Practically every well established institution has several times more students now than its enrolment 15-20 years back, but the physical facilities have improved only marginally with the result that the working conditions of the teachers, facilities of library and laboratories have worsened and so has the living conditions of the students. Discipline and studies have therefore been worst hit.

and politicians took advantage!

Advantage of such a situation has been taken of by all the political parties. The desirability of "depoliticizing" the universities has been expressed from a large number of forums. The limits to political parties involvement does not mean limits to discussions, debates and pursuits of different ideologies and perspectives and policies with regard to national development. The government may consult political parties on this issue so as to protect the institutions which are so indispensable for ensuring any national development, in fact, the future of the country. If education is disrupted and damaged, nothing would be able to save the country.

our schools need basic facilities

No one can deny the fact that the higher education cannot deliver the goods unless it received a motivated group of students who have gone through proper primary and secondary education Our data shows that we have one primary school at every mile and a secondary school after every mile and a half but unfortunately in a majority of schools the basic infrastructure is sadly under-provided which is one of the major reasons for high drop-out rate. The bare minimum facilities in all the educational institutions will have to be provided. A core course comprising about 50 per cent of the total may be recommended for the schools and the remaining may be developed locally which should be based on the local needs and the environment so that even the drop-outs may not become misfits.

and removal of discrimination

Today's education system has in it a very high degree of inequality. The inequality is between what we have in urban areas and what we have in rural areas. In general, urban schools are good, rural schools bad. There is also a great degree of discrimination towards half of our population, namely, the girls. Women's education is a neglected area, neglected in the sense that we may have good enrolment figures in the beginning but if we take the drop-out rates, we find that comparatively very few girls complete their education. And if we expect that we will be able to compete with the world neglecting half of our population, we are deceiving ourselves.

promote manpower development

Vocationalisation of education recommended by the Kothari Commission did never take off. In fact, the percentage of students in vocational institutions was higher even when the recommendation was made than what it is today. Again, it will never succeed if the students going in for vocational courses are considered to be second class citizens. Some percentage of seats in professional colleges should be reserved for them and they should be encouraged to take them up and may also be given incentive by reducing the time period of the course because of the field experience that they have attained. Further, the industries, big and small in the area, the cottage industries, small scale industries, should become associated with the institutions and at least 25 per cent of the time of the students should be used for field training and apprenticeship. This should be regarded as a source for manpower development and all the ministries such as that of industry, electronics, communications, transport, agriculture, etc. should participate in this and must share the cost of manpower development.

"Analysis of developments over the last two decades makes it clear that desired improvements have not taken place because of the non-implementation of the recommendations of Kothari Commission Report which culminated into the education policy adopted in 1968."

grant autonomy to colleges

The credibility of examination and the degree has been completely lost because of the increasing reports of malpractices connected with examinations—such as leakage of question papers, mass copying and inflated marking. Even under the 'best' conditions students pressures have led to 50-75 per cent choice in papers and non-repetition of questions asked in the previous year. Teaching days have been curtailed, courses are not covered in the way desired and the examinations are held on the little that was taught. The results of the CSIR and the UGC show that hardly 10 per cent of the students who take the Fellowship examinations get above 40 per cent marks. In many cases even first divisioners, first position holders and gold medalists have failed to qualify It will be better if the institutions (at least 50 per cent of the colleges which are viable) are made autonomous in every respect. They should be given the responsibility to develop the courses and to examine their students and to give the degree of their colleges. Once they are given this responsibility, I am sure, the teaching will rise to the occasion in due course of time even if the experiment may not

appear to be promising in the beginning. Together with this a national (autonomous) examination system be developed for both undergraduate and postgraduate courses and the students be encouraged to take these if they wish to establish the credibility of their degrees.

manpower planning, a challenge

One of the biggest problems in our country has perhaps been the manpower planning to face the technological change. We are supposed to anticipate manpower requirement and produce that much of manpower that is needed by the country. We have enormous difficulties in anticipating this. Unfortunately we do not have a reliable model to develop this. And the model can again be reliable if the information network in the country is reliable. For educational planning what will be needed is not an aggregate estimate but an estimate of manpower on various segregated basis, discipline wise, degree or diploma level wise, postgraduates, research scholars, Ph.D degree holders, diploma holders, craftsmen, etc. The problem of utilisation of scientific and technological manpower in India is thus a deep-rooted problem and pervades nearly all sectors of economy. While inadequacy of the existing education programmes may to some extent be responsible for this malady, the root of the disease lies in the lacunae of our development plans which have not yet been able to generate sustained demand in the economy for technological development through well coordinated research and development programme, which in turn generate continued demand for scientific and technical manpower to man the process of growth through technological development, the education programmes are bound to improve. If the employment prospect and the utilization pattern of the qualified manpower improve, the sincerities and involvement of both the teacher and the taught will automatically improve. A purposeless education on the other hand is bound to be dissipative.

compulsion of changing world economy

There has to be a very clean recognition of the fact that the world is in the crucible of a new industrial revolution and this is a major recognition which we have to reckon with. The depression or the recession in the world economy today is perhaps observing some of the very fundamental restructuring that is going on in industries in the developed countries and when the world emerges out of this recession, which is bound to happen within a few years, this will give rise to a different type of industrial structure and our educational planning will have to be geared to meet this challenge.

It is tragic for India, which is also true for other third world countries, that before we could cope up with the first industrial revolution of the 19th century variety, we were forced with the challenges of the second, i.e., chemical and now the third one, i.e., microchip technology and soon the fourth, i.e. biotechnology of the 21st century. The task has become very difficult because there has been a tremendous shortening of the time between the development of an idea and its useful application. The time lag between the development of the principles underlying the combustion engine and their application in automobiles was relatively long and the life of the industry thus spawned has also been relatively long. But the period required for the advancement of electronic computing from an idea into a major industry has been only a few decades. Scientific principles and ideas are now moving to useful applications in only a few years and to product manufacture in only a few years more. It was only 12 years back that Californian scientists discovered restriction enzymes to cut the DNA and DNA ligase to join them in 1973 and we have already produced industrially Humulin (to replace insulin) and Human Growth Factor, Interferons, monoclonal antibodies in the market for a few years now. The nation should prepare itself now for which the educational system will have to play a very important role. You cannot have really any meaningful environment for applied science and technology unless there is an atmosphere for strong and flourishing basic sciences.

If we are sincere in our desire to take our country to the 21st Century with a proper place of respect, we will have to give a better and central place to education and not a poor, neglected, peripheral place. We started the First Plan by spending 7.5 per cent of our budget on education and have now reduced it to about 2.0 per cent. The education budget for the year 1985-86 that of 513.78 crores as against 448.74 crores of the last year is perhaps lowest in the history of education budget since our independence in terms of the percentage of total budget. It is about 1.2 per cent of the budget. I only hope that our nation and our leaders will not wait for the disaster to overtake us because if we do not invest in education today, we will have to face darkness in the 21st Century. Had we continued spending 7.5 per cent of the budget allocation on properly planned education, our average annual growth rate might have been slightly lower than what it has been but today we would have been at the threshold of exponential growth. Education is not an industry where we can expect quick returns. We have to wait 15—20 years to reap the fruits. Today we are facing the crisis in education for whatever we did in the 1960's

Do away with this disparity !

Prof. (Mrs.) Vanaja Iyengar

The document "Challenge of Education—a policy perspective" is disappointing, feels Prof. Iyengar. It has only highlighted the difficulties faced in the implementation of past policies without clearly showing how they can be overcome. She says, removal of disparity in education, drastic reforms in higher education, functioning of national open university as the highest organ for higher education, a rightful role for UGC and proper implementation of the three-language formula, are some of the reforms needed urgently at the moment.

AT THE OUTSET IT SHOULD BE STATED THAT it is good that a document on education policy has been produced and that there is to be a national debate on education policy.

A commendable feature of the document is the linking of education policy directly with certain immediate imperatives of national development such as national integration and the need for scientific-technological preparation for the 21st century

Further, the general assessment of the achievements, failures and lags of the developments in the education sphere is refreshingly objective.

a disappointing document !

The document, which the Ministry of Education has placed for national debate and discussion is, however, disappointing. It bears all the signs of over-rapid finalisation in order to meet a date-line rather than to come to certain conclusions with regard to changes in design, structure and policies required in the sphere of education Perhaps the document has been prepared by different groups or persons who had no time to bring together their views in the form of consensus. This defect is most evident in the form of repetition of statements in section after section, especially those dealing with elementary education, adult literacy, vocationalisation, the examination system, importance of resources allocations and so on. Another importnt shortcoming of the document is its failure to sharply pose the issues, advance priorities and offer concrete suggestions for immediate advance as well as the perspective of advance. The most conspicuous examples of this unfortunate attitude are to be seen when it comes to suggesting recommendations regarding how and when vocationalisation is to be pushed

and on whether capitation fee-based colleges are to be permitted or not. But these are not the only examples of this approach.

Yet another wrong orientation of the document is based on what is a correct evaluation! It points out that many of the problems and necessary prescriptions were anticipated by various commissions set up by the Government at various times, especially the Education Commission (1964—66). It states "the problems of today are more the result of tardy and haphazard implementation and a progressive decline in allocation of resources". What has not been brought out is why there was this haphazard implementation and tardy allocation of resources and, therefore, what are the remedies for these two ills. Two decades have passed since the Education Commission recommendations were available during which, significant problem -buildups have taken place, requiring immediate drastic action. This could not have been foreseen by the Commission. Therefore, significant proposals have to be advanced for the solution of these newly created problems. It is to be emphasised that we as a nation are falling behind the advanced countries and, therefore, there is every need to prepare for the compulsions and challenges of the latest scientific and technological quantum jumps.

"It is to be emphasised that we as a nation are falling behind the advanced countries and, therefore, there is every need to prepare for the compulsions and challenges of the latest scientific and technological quantum jumps."

nothing to remove inequality

Though basically non-committal, the document can still be regarded as having the subtle approach of operating within the framework of disparity. There are repeated assertions about the need for "radical changes", and yet no concrete proposals to remove or at least reduce the disparities at the stage of elementary education, on which the entire system of inequality and inequality in education is based.

In particular, there is not even a discussion of whether public schools should be allowed to continue, and whether there should be nationalisation of the elementary and secondary institutions. However, the document does start out with the statement that "in a society which has chosen the democratic rather than the totalitarian path of development, education has to be the mainstay of all national endeavours".

Teachers will certainly not find much to cheer with the attitude of the document towards them. Although a few of them have been credited of being the mainstay of whatever has been achieved and whatever helps the system from total breakdown, in general teachers seem to be the villain of the piece. No doubt that th teachers today are guilty of much that is done an much that is not allowed to be done. But then the themselves are the products of society in general an of the education system in particular. The only effe tive way to correct the teachers is by the examples c those actually in the corridors of power, which itse is a tall order ! It is not the teachers alone who ha lost motivation and creditability.

Another issue cavalierly dealt with is political ir trusion. It is not made clear as to what kind of pol tics and politicians are harmful. However, there this statement that broad political issues should b debated and discussed whereas party politics shoul be kept out.

What should be fought and exposed is the partisa narrow and petty ways in which, all political parti approach educational institutions, the idea being t control these institutions for purposes of power an patronage. This is further internalised by unscrupu ous and pushing elements among administrator teachers, students and employees. It is just low pet politicking of the crudest kind.

What is non-existing is politics of commitment ce tering on big themes—discussion of philosophic ideals, ideology, etc.

disparity, the chronic malai

The fact is that the heart and core of the educ tional malaise in our country is the same as the gen ral national malaise, that is, the growth of inequali and disparity in all respects. In the last four decad India has not become a poorer country, but all t same, inequality has grown along with persistence poverty for a very large number of our people. Whe as in the sphere of education, at every level there b been greater access, at the same time, the distar between the best and the average has also widen We have yet to get to the road to equality and soc justice. We have given information of a kind to t majority and the opportunity to learn to a sm minority who had inherited an acquired privile However, this problem cannot be tackled at the le of education alone. As the document points out, e cation is only a sub-system. The system as a wh has to change.

"Though basically non-committal, the document c still be regarded as having the subtle approach of op rating within the framework of disparity. There a repeated assertions about the need for "radical cha ges", and yet no concrete proposals to remove or least reduce the disparities at the stage of element education."

It is one of the greatest indictments of our pres system that as many as 60 per cent and more of

people cannot even formally be certified as literate. Illiteracy eradication cannot be left to voluntary effort alone. It has to be a separate, distinct official agency under the education ministry which should run it as a target oriented national campaign.

It has been noted in the document that the rate of growth of entry into primary education has slowed down in recent years. The retention rate for boys has improved but at a very slow rate. For girls the situation continues to be as deplorable as ever.

The condition of most primary schools is unimaginably bad in every respect Public schools and expensive non-residential private schools of luxurious standards exist side by side with municipal schools and village schools. The principle of neighbourhood schools recommended by Kothari Commission remained on paper. This should be given a trial, along with midday meal schemes and free text books, slates,exercise books and uniforms for all those whose income is below a certain level.

There should be a review of the entire secondary education system. All those going through secondary schools must not only receive general education, but also some technical skill—polytechnicalised education, not vocationalisation.

Medium of instruction and the issue of reservation in admissions are two aspects ignored by the document.

The three-language formula should be strictly implemented. Upto college level, the medium of instruction should be in the mother tongue. Teaching of English should be strengthened because at the university level English will continue to be the medium, unless great care is taken to strengthen the basic in-

"The only effective way to correct the teachers is by the examples of those actually in the corridors of power, which itself is a tall order ! It is not the teachers alone who have lost motivation and creditability".

frastructure for introducing mother tongue as the medium for post-graduate studies and research

reduce reservations

As for the system of reservation in admissions, it must be said that reservations have only marginally improved the position of those whose cause it was introduced to promote. They went nowhere near the root of the matter.

Reservations, apart from those pertaining to SCs and STs should be linked to income and region. Reservations should not be extended socially speaking and existing reservations may continue only for another two generations. Blanket extension of reservations to more and more castes and tribes should not be undertaken. They neither end nor even mitigate inequality while they do consolidate caste divisions in society and create vested interest in castes while not ending vested interests of wealth and power.

reform higher education

The main stress in the sphere of higher education has to be on the reform, reorientation and renovation of the existing university|college system. The colleges

"What should be fought and exposed is the partisan, narrow and petty ways in which all political parties approach educational institutions, the idea being to control these institutions for purposes of power and patronage".

need to be delinked from the universities The affiliated colleges must have a separate authority with a suitable agency for academic monitoring Post-graduate enrolment must be only in the Universities If higher education is to play the role of the vanguard of national re-enforcement and progress it has to be placed on the list of Central subjects Unlike the other levels of education, universities are not needed to be so locally acclimatised, but are needed to attune much more directly to immediate and direct national needs. The universities should be directly funded by the University Grants Commission who will provide the requisite linkages. Autonomy is the life blood of higher educational institutions and accountability is to the students and to the community. This being so universities have not to be run by and be subordinate to the various ministries of Education and the bureaucracy.

The following remarks of the Kothari Commission are note-worthy in view of fast corrosion of autonomy of universities taking place

"It is not desirable that the Government should deal directly with the Universities It is always a great advantage to interpose, between the Government and the universities, a committee of persons selected for their knowledge and standing rather than for their political application or official status. Such a device ensures the necessary co-ordination between Government and universities, allocates Government grants to Institutions of higher education on the basis of carefully assessed needs and yet insulates them from inappropriate political influences"

Research must be brought back to the university. It is in the universities, above all, that knowledge must be generated because it is there that received knowledge has to be passed on.

It should be mentioned that the IITs and the IIMs

are fast becoming feeders for Industries abroad at the cost of the Indian public. If this is the only purpose they serve, perhaps they should be brought back into the universities.

The Kothari Commission recommendation on the role of the UGC should be implemented.

"....the UGC should represent the entire spectrum of higher education.....We fully support.....that 'All higher education should be regarded as an integrated whole, that professional education cannot be completely divorced from general education and that it is essential to bring all higher education, including agriculture, engineering and medicine within the purview of UGC'. This is the ultimate direction in which we should move".

primacy to national open university

The National Open University and distance education have an important role to play. The National Open University should not at all be run on the lines of any State Open University. In fact, the State Open University should be re-designated Open Colleges to make them distinct from the National Open University. The National Open University should be regarded as the highest level of higher education. It should

"Illiteracy eradication cannot be left to voluntary effort alone It has to be separate, distinct official agency under the education ministry which should run it as a target-oriented national campaign".

basically have two functions One is to make available at the highest level the results of ongoing significant research and the new knowledge acquired. It should be the institution to tackle the tasks emerging from the knowledge explosion and the information revolution. It has to be constantly researching into research, so to speak. Its second function should be the popularisation of knowledge both to jog the memory as also to extend the horizons The stress has to be on making knowledge acquired by specialists accessible to the public both directly as well as in form easily and effectively applicable by the nation at large, at various levels. In short, it should generalise, relate and spread updated knowledge at any given time. This kind of Open University need not give degrees that can be left to Open Colleges at State levels. Such a university requires the very minimum of permanent staff, basically in the form of really excellent education administrators or managers Its academic staff should be of the very highest quality, coming from various universities for limited periods of time and getting back to their universities where they permanently belong, teach and research. Then the National Open Univeristy will not be a substitute or alternative of formal education, but the apex as it were, for the entire system of higher education. It should act as a catalyst for the entire system and be truely rooted in the system. It will also help the State Open Colleges by preparing visual material, cassettes, teaching aids and other educational software.

importance of mass media

The Open Colleges can then perform the tasks of radio and television, colleges training and awarding

"There should be a review of the entire secondary education system. All those going through secondary schools must not only receive general education, but also some technical skill—polytechnicalised education, not vocationalisation".

degrees through distance education techniques. These can meet the demands of adult education, functional literacy as well as meet the aspirations of those who wish to better their qualifications or add to their knowledge or skills.

Finally, a word regarding the building of a learning trams society. This is a matter pertaining to the entire social system rather than to the sub-system of education. A stagnant society cannot be a learning society. A society in which life is routinised, static and without much prospect of vertical or horizontal mobility for the vast majority, cannot be a learning society.

It is only people who are challenged, who have to grow in order to exist and for whom ambitions are realisable on the basis of better knowldege—equipment, who will acquire the habit of learning. Without such a society, talk of lifelong education becomes ritualistic.

However, where learning is not needed to meet any challenge, it can and has to be provided—may be painlessly in the form of entertainment at least ! It

"It should be mentioned that the IITs, and IIMs are fast becoming feeders for Industries abroad at the cost of the Indian public. If this is the only purpose they serve, perhaps they should be brought back into the universities".

would be better than nothing. Already the range of programmes on the Doordarshan from quiz shows to series like the Living Planet, Survival, Civilization, etc., have gone a long way to "educate" our society. Such things can be improved upon, multiplied, and made more effective media of continuing education which may ultimately pave the way in providing a challenging society which would in turn lead to learning society. □

Bring radical changes in education

Prof. Durganand Sinha

Describing the document "Challenge of Education—a policy perspective" as disappointing, the author says, "It fails to provide an integrated perspective essential for a realistic education policy". It also fails to provide for a monitoring mechanism to ensure implementation of the programme. According to Shri Sinha, "the neglected facets in the document are absence of effort to visualise the demands of the 21st century, inculcation of basic values and character formation, research, role of research institutions". These calls for radical transformation of the content, style, media and process of education, he asserts.

document is disappointing

THE PRIME MINISTER'S ANNOUNCEMENT a year back that education is to have a igh priority in the national scheme of things and hat a new education policy was on the anvil which vould make a radical departure from the past as well s prepare the nation effectively to enter the twenty-irst century raised high hopes not only among edu-ationists but in everyone interested in the advance-nent and welfare of the country. Expectations appear-d genuine when it was stated that the new policy vould be formulated not according to the hunches, vhims and preconceived notions of bureaucrats, poli-icians and the so-called "experts" whose credibility iinged not so much on scholarly pursuits but on be-ng frequenters in the corridors of power, but through a nationwide debate. After waiting for months for a position paper which would bravely and even in a hard-hitting manner present a comprehensive and rea-listic picture of the true state of affairs on the edu-cational scene and identify basic issues thereby ini-tiating and channelizing the national debate in mean-ingful directions, the document entitled 'Challenge of Education—A Policy Perspective' that has been circu-lated by the Ministry of Education is a disappoint-ment.

ignores monitoring mechanism

Before any policy is formulated, it is essential to look at the constituents of a policy, and the pre-requi-sites needed for framing it. It should lay down well-defined and clear-cut goals, and a general plan of ac-

tion or programme for its attainment. It should have as its ingredient details of a monitoring mechanism for ensuring that the programme of action is not only on paper but serious effort is being put into implementing it. Lastly, an evaluative procedure is to be built into it so that the impact of various action plans is constantly assessed and necessary corrective measures are regularly taken. In almost every sphere of our national life there is a vast gap between what is professed as objectives and what are actually imple-

"After waiting for months for a position paper which would bravely and even in a hard-hitting manner present a comprehensive and realistic picture of the true state of affairs on the educational scene and identify basic issues the document entitled 'Challenge of Education—A Policy Perspective' is a disappointment."

mented which has led to our country being characterized as a "soft state". Therefore, a monitoring|implementing and evaluative mechanism is most essential for any education policy if the same is not to remain merely a pious hope. After all, lofty ideals were laid down in our Education Policy of 1968 and in the excellent recommendations of various commissions on education appointed since Independence. Even if a small part of these recommendations had been put into effect, the educational scene would not have been so grim as it is today. Without an elaborate monitoring mechanism as an essential constituent of policy statement, the whole exercise is likely to remain hollow deceiving people through high-sounding statements and catchy phrases

neglects realities

Viewed in this perspective some of the salient facets which appear to have been neglected in the exercise are briefly indicated. The document itself fails to provide an integrated perspective essential for the formulation of a realistic education policy. It does provide a few useful data on various levels of education but carefully avoids presenting the painful realities of the contemporary educational scene in a brave and forthright manner. On the contrary, it is full of cliches, rhetorics, slogans and platitudes that, instead of highlighting the basic issues, tend to confuse and hide the unpleasant realities of the situation. Some significant aspects of the total educational process have been neglected if not ignored giving the impression that the thinking that has gone into the preparation of the document has been casual and perfunctory, and that there has been absence of effort to view the educational scene in a holistic and integrated manner. Since it is not possible to deal at length with all the issues that have been neglected, only a few salient ones have been indicated. In particular, the main neglected facets are (i) absence of serious effort to visualise the demands of the 21st century indicating the exact transformations in education required to meet those demands, (ii) pre-primary education, (iii) education and inculcation of basic values and character formulation, and (iv) research and role of research institutes.

requires radical changes

First, education has a futuristic orientation. It has to develop human potential to meet the requirements of new technology and transformations in society that are in the offing so that the country does not lag behind the advanced nations of the world. In comparison to changes in the wake of Industrial Revolution, technological revolution of today is bringing about far more rapid, widespread, and radical transformations in production processes, transportation, communication system, and the entire life style of the people and their familial and social relationships. These have to be anticipated in concrete terms, and our education policy formulated which is calculated to generate appropriate scientific, industrial and technical skills as well as create organizations and build institutions, and inculcate attitudes and values that can effectively absorb these changes and derive full benefits from these

"The document itself fails to provide an integrated perspective essential for the formulation of a realistic education policy. It does provide a few useful data on various levels of education but carefully avoids presenting the painful realities of the contemporary educational scene in a brave and forthright manner."

new developments. Just stating that we cannot afford to enter the 21st century with 54.8 per cent of world's illiterate population is not enough. The content, style, media and process of education would need radical transformation. Much of the content that is in curriculum at various levels are obsolete. They have to be dropped however strong the opposition to it may be. Scientific concepts have to be inculcated early using suitably designed games and toys, and sciences and mathematics have to receive due emphasis in preference to 'soft' subjects. With disciplinary boundaries in the world of knowledge tending to crumble and "hybrid" subjects like biophysics (to give only one example) becoming more relevant than just biology or physics, interdisciplinary orientation has to become the academic culture rather than building disciplinary empires.

and new work culture

The new technological revolution demands team-work and organization. It is well recognized how we Indians functioning as individuals can equal and even excel our counterparts from advanced countries but when put to work with others and in teams, we display surprising deficiencies. It is commonly stated that one Indian is equal to two Germans or Japanese; but three Indians together are less than one German or Japanese. Ashis Nandy's in-depth studies of some eminent Indian scientists have shown how as individuals, their work was unmatched, but they were a kind of liability when building a team or developing institution. It is also true that when under pressure we perform miraculously well, as exemplified in spectacular ASIAD or the NAM. But in normal work life we lapse into slackness and are easy victims of "chalta-hai" culture. To meet successfully the demands of new revolution in technology that is on us already, it is not enough to wipe out illiteracy, but requires exposure to new knowledge, and attitudes and style of functioning have to change radically We have to learn how to function in a team, build institutions which can outlast the individual, and display appropriate work ethics that abhors slackness, shirking of responsibility, lack of accountability, and insists on devotion to duty Somewhere along the line it is for the educational process —formal as well as informal--to inculcate such a

"To meet successfully the demands of new revolution in technology that is on us already, it is not enough to wipe out illiteracy, but requires exposure to new knowledge, and attitudes and style of functioning have to change radically."

work culture. It would be a fatal omission if the need for it is glossed over in our new education policy.

Only some general problems have been raised. In a paper of this nature, it is not possible to spell out in-depth and in detail the demands that are likely to be made by the new revolution in technology that is likely to get more intensified by the turn of the century and the consonant transformation in education to meet that challenge A full dress debate is required to identify such details and suggest appropriate programme of action at different levels of education to meet the demands of the 21st century Just ritual-like repeating the slogan that we are to prepare for entering the 21st century is not enough. Hard thinking for evolving appropriate education policy in this respect is required.

why pre-primary education ?

The second neglected facet is the pre-primary level. Due emphasis has rightly been put on elementary education. It is to be remembered that the educational processes begin much earlier and have their impact on later stages. An alarming problem at the elementary level is the low retention rate. Of every 100 children enrolled in the first year only 23 reach class VIII. Among the drop-outs, disproportionately high percentage belongs to the scheduled castes and tribes and to the poor and deprived sections of the society. Studies have demonstrated that the drop-out rate among children exposed to some kind of pre-primary education is significantly lower than in others. It is an established fact that many of the perceptual, cognitive and linguistic skills essential for effective academic functioning in later years are acquired early. They are learned in family environment provided the same is 'stimulating' and in nurseries and kindergartens. Therefore, for a successful elementary education programme, the pre-primary period has to receive due attention including the nature of child's environment and family experiences.

"In almost every sphere of our national life there is a vast gap between what is professed as objectives and what is actually implemented which has led to our country being characterized as a "soft state".

There have been numerous studies conducted even in this country which have conclusively demonstrated the salutary impact of 'enriched' environment and stimulations received in family setting in the child's acquisition of essential cognitive skills and coping strategies and his performance in later years, and the detrimental effects of 'restricted' environment of the family or the school. Since this problem is especially acute among the disadvantaged, a policy regarding their education at the pre-primary level and intervention strategies to overcome the deficiencies in environment and in familial setting has to be developed Imaginative utilization of indigenous games and development of educational toys using inexpensive materials locally available for imparting necessary cognitive skills and healthy interpersonal functioning would go a long way in laying solid foundation for education. Remedial measures at this stage are likely to be more effective and correct with many of the distortions witnessed at the elementary and later stages with regard to drop-out rates and poor academic performance of especially the underprivileged children

want of parental care

There is another aspect of this problem which is significantly reflected in children of families where both parents are working, and do not have the advantage of grandparents or other relations to act as parent surrogates With increasing tendency towards nuclearization, the problem is becoming acute even among well-to-do middle class families Due to pressure of work-life, the families tend to neglect the socialization functions. Many of the skills, attitudes and values which were earlier ingrained through interactions in

familial setting which were so relevant for later academic performance are no longer acquired there but left to schools or to peer group interactions. The gap created by parental 'absence' has to be systematically bridged by providing adequate institutional facilities for child-care and allied services. These are best organized by the communities themselves. But where such services are lacking due to ignorance or economic circumstances, the state should step in to fill the vacuum. We have already the anganwadis and balwadis and various programmes for the disadvantaged children. They have to be made more effective and channellised to include early education and socialisation especially for children belonging to the underprivileged sections of our society.

crisis of character

Thirdly, a related facet that has not received sufficient attention is that of basic values and character formation, and moral education. Though scientific temper, democracy and secularism have been mentioned in the document, one inevitably gets the impression that values and character traits like truth, honesty, integrity, non-injury to others, control of baser desires, prosocial attitudes like altruism and concern for others and so on have been neglected. Democratic values and secularism are meaningless if moral values have eroded. In India we face the worst kind of crisis of character. To state that erosion of moral value is a world-wide phenomenon is no consolation. The problem has to be faced squarely rather than rationalised or explained away.

These basic values are inculcated fairly early as a part of the general process of socialisation. As Sudhir Kakar has shown, rituals and family ceremonies at different stages in one's life-cycle help to form these into the Indian psyche. But as pointed out earlier,

"Just stating that we cannot afford to enter the 21st century with 54.8 per cent world's illiterate population is not enough. The content, style, media and process of education would need radical transformation. Much of the content that is in curriculum at various levels are obsolete."

family seems to be fast relinquishing this role and the ceremonies and rituals are getting to be looked upon as antiquated and are being dropped. A kind of value-vacuum has occurred, a reflection of which we see all-around in our social functioning. An honest and straightforward person is regarded as 'simpleton' and those enerishing moral values are called old-fashioned and rigid. Dishonest living and cheating big and small have almost become a way of life and rarely receive social condemnation. If this mad spectacle continues unabated, the entire social fabric would get diseased beyond redemption It is, therefore, gratifying to find that the Prime Minister has in one of his recent speeches emphasized the role of education in character-building and personality development.

and of social values

Unfortunately, in the perspective paper circulated, scant attention has been paid to the vital need of healthy human development of which moral and spiritual values and a well-rounded personality are integral components. The importance of family experiences and socialization processes have already been discussed. There is the role of early education and modelling process. Many values are learned informally through examples and stories. The story of the monkey throwing into the river that part of the profit of the milkman earned by adulterating the milk he sold inculcated among us the value of honest living. Such didactic materials are getting conspicuous by their absence in the reading list for children. Instead, games like Monopoly (to mention only one) are gaining popularity which inculcate the worst kind of cut-

"In the social sciences, there is urgency in generating data and models through high quality research to be utilised in policy formulation and action programmes for human welfare. To this extent any national policy on education has to give due cognizance to higher research and role of research institutes that have developed in the country."

throat behaviour, high degree of competitiveness, unhealthy selfish practices and the worst aspects of capitalistic values. If textbooks for children have to be purged of materials that foster inter-communal hatred and tension, it is equally important to provide materials that help to generate the right kind of socio-cultural values.

In this context, it is to be noted that attitudes like social prejudice, secularism and so on get formed almost imperceptibly by the age of 8 or 9 years through parental, educational and media influences. Hence, appropriate strategy has to be worked out to control the same from the earliest stages.

There is also the modelling effect in character formation and value generation in the child. Role-models are frequently drawn from the family and social settings, from books and the media. It is somewhat disconcerting to note that for quite some time many children emulated the behaviour of the bandit Gabbar Singh of Sholay fame and recited passage after passage of his dialogue. Many got enchanted by the vulgar display of wealth, the worst aspects of materialism and gang culture that are displayed in our films. It is, therefore, not to be surprised if the goons, the dishonest and the vulgars are capturing the socio-political arena, and contaminating our entire social existence. If character formation and inculcation of basic socio-cultural values are one of the goals of education, they should have their place in programme of action as

embodied in our national education policy. It should not only be stated as one of our educational goals, but strategies to be used for fostering the same should form essential part of our educational policy.

why need research ?

Lastly, any national education policy characterised by futurist thrust can ill-afford to ignore research and role of research institutes. It can generally be said that universities were conceptualised as a place for generating and imparting knowledge, development of certain skills including that of verbal communication, and fostering certain attitudes towards life and society in general. Through interaction among scholars, they were supposed to develop into repositories and fountainheads of knowledge. In course of time, there was extensive application of knowledge especially in the sciences for solving problems, creation of wealth, and products that could be commercially exploited. This led to a new kind of development researches with the specific purpose of their utilisation. Such applied research, according to the purists believing in knowledge uncontaminated by practical utility or application was not considered very congenial to the prevailing ethos of the universities. Further, with research becoming more complex requiring large investments and team work, the universities with the pressure for teaching and the general din and bustle ceased to remain conducive place for it. Thus, a kind of dichotomy (which in itself is unreal and undesirable) between pure and applied, or what has been termed as "light bearing" and "fruit bearing" research tended to develop. This along with other factors led to the formulation of the National Science Policy in the mid-fifties and the establishment of a chain of national laboratories and specialised institutes concentrating almost exclusively on the applications of science to the needs of the country. Though a national policy for social science was never formulated, the assumption was equally applicable and in due course led to the establishment of institutes for social research all over the country, and the ICSSR as the financing and coordinating body At present there are no less than 20 ICSSR-sponsored institutes engaged in data generation and conducting such studies which can have an impact on policy formulation and its execution. Collectively, these research institutes—both in sciences and in social sciences—are using a considerable part of the allocation made for higher education. Further, in social sciences particularly there has been all over the country a mushrooming of institutes often associated with the names of powerful political figures and getting some government subvention through pressure. Many of these 'private' institutes are doing excellent work, but a large number are of sub-standard which, if recognised and supported by public funds, would unduly be burdensome to our meagre resources.

"In India we face the worst kind of crisis of character. To state that erosion of moral value is a world-wide phenomenon is no consolation. The problem has to be faced squarely rather than rationalised or explained away."

It is the high quality research that provides the base for high calibre, trained and creative personnel in various fields of our activities including science and technology to keep abreast of the emerging patterns of production and compete in other spheres with the developed countries of the world. Similarly, in the social sciences, there is urgency in generating data and models through high quality research to be utilised in policy formulation and action programmes for human welfare. To this extent, any national policy on education has to give due cognizance to higher research and role of research institutes that have developed in the country.

and the research institutes

A number of issues have to be carefully debated and policy decisions taken. Firstly, there is much to be desired in the value and quality of research conducted in most universities and even in some research institutes. The questions of direction of research and 'quality control' are vital. The fear expressed some years back by Lord Robins in his excellent report on higher education in Great Britain has come true on the Indian educational scene. Making research a precondition for appointment and promotion has degraded the quality. A sound policy for ensuring quality has to be formulated. Secondly, the roles of research institutes have to be spelled out and their place in the general scheme of education has to be laid down. Further, their relationship with the universities, the government and the community at large has to be outlined. Keeping the institutes as islands isolated from the general stream of education has not only depleted the universities of their personnel and resources but has not been very desirable even for the institutes themselves. Moreover, while establishment of research institutes through private endeavour is laudable, it is essential to ensure minimum standards through a system of certification. Lastly, there is much to be desired by way of utilisation of research results by the government and other 'consumers' of research. How to generate useful data and their utilisation by various agencies are problems that require in-depth examination. Applied research is an exercise in futility if its results are allowed to gather dust and not put into use. All these and other related issues require to be carefully debated. If research and research institutes find no place in the national education policy, it would amount to gross neglect of the highest level of the educational process □

Education needs qualitative change

Prem Kirpal

The noted educationist Prem Kirpal says the paramount need of the hour is appropriate stress on qualitative improvement of education at all levels. A national education policy, he feels, must bring clear objectives, urgent priorities and suitable modalities into close relationship. This is necessary for developing a comprehensive and integrated design of change fully supported by all possible resources. The educational programmes should be related to the needs of contemporary man looking towards a fast-changing future. Kirpal lists some major constraints responsible for the neglect of education in the past and enumerates priorities for shaping an overall educational policy.

THE MINISTRY OF EDUCATION'S RECENT DOCUMENT entitled "Challenge of Education—A Policy Perspective" is a lucid and readable statement which aims at nation-wide debate on the future of Indian Education. The middle of the statement, giving an overview of educational development and a critical appraisal, makes valuable contribution to the basis of such a wide-ranging discussion. The beginning and the end attempting a general statement on Education, Society and Development" and suggesting 'An approach to educational reorientation" are tentative and inadequate. The challenge is well projected; the response is disappointing.

It is need of the hour !

The challenge to debate and discussion is necessary and timely and one hopes it will lead now to wise choices and purposeful implementation. Since Independence and even earlier we have gathered an impressive and growing corpus of educational thought accompanied, unfortunately, by insignificant actions. Change has certainly taken place, but more from the compulsions of life than the conscious and deliberate will of policy-makers and their establishments. To the new climate of thought happily generated by the Prime Minister's ardent faith in educational change, a few thoughts and suggestions are offered in the following paragraphs.

A great renewal of education by appropriate stress on qualitative improvement at all levels and more efficient functioning of all its modalities is a paramount need of the hour. The change from the requirements of a merely linear expansion of the educational system to a radical and qualitative transforma-

tion of the system itself in both its structures and content presents formidable tasks and responsibilities to educational planners and administrators. Their task is further complicated by the absence of a clear, concrete and integrated national policy of education. It is true the Report of the Indian Education Commission of 1964-66 (the Kothari Report) carries out a comprehensive review and makes clear recommendations. The report was, however, never translated into an operative national policy, only a number of guidelines were stated in the so-called national policy document,

"If the urge for egalitarianism in education in genuine and dynamic it will surely contribute to socio-economic change as well as educational transformation. But the prospects of educational change are limited if the socio-economic environment is not favourable and even resistant to change".

and no modalities for implementation were devised. The guidelines remained general and fragmentary statements of broad objectives which were not even integrated into a larger design. A national policy must bring clear objectives, urgent priorities and appropriate modalities of action into close relationship for developing a comprehensive and integrated design of change fully supported by all possible resources and effective mechanisms of implementation. This was never attempted, and we continue to float in the midst of numerous recommendations, generated by endless conferences and meetings, without having achieved any focus of certainty of meaningful action The drift of uncertainty and indecision should now come to an end.

The nature of the educational process and the new requirements of life-long education and non-formal education impose special burdens on planners and administrators whose task is comparatively ea ier in other developmental fields

for qualitative change

Let me recall some experiences of the past to illustrate the continuing gap between thought and action in the field of education. When I came from University teaching in Lahore to the Education Department of the Government of India in 1945, a new, refreshing, bold and imaginative plan of post-war educational development (Report of the Central Advisory Board of Education, popularly called the Sargent Report) was adopted in high hopes This plan began with the following words borrowed from the White Paper embodying proposals for the post-war expansion of the British System of Education . "Upon the education of the people of this country the fate of this country depends." Twenty years later the Indian Education Commission appointed by the Education Minister M C. Chagla reported in 1966 on a comprehensive reform of education at all levels and began its bulky report with the following sentence : The destiny of India is now being shaped in her class rooms". The report went on to assign to education a dominant role in the fulfilment of national objectives of raising the standards of living of the Indian people and achieving a higher quality of life based on a creative union of modern science and ancient spirituality. Six years after the appearance of the Kothari Commission's Report in India, UNESCO carried out a similar exercise at the international level for the whole world in a Report entitled "Learnign to be—The World of Education Today and Tomorrow" which I had the honour of presenting on behalf of the Executive Board to the General Conference of all member-States in 1972. UNESCO's Report, submitted by an International Commission under the Chairmanship of Edger Faure, a former Prime Minister of France, began with a Preamble on Education and Man's Destiny stressing two fundamental ideas : Life-long Education and the learning society. The International Report elaborated these ideas in the context of a World Community of diverse nations, economics and culture, and looked optimistically to the future in the following words of hope and challenge :

> "The age of change has provided us with the instruments needed to meet the quantitative and qualitative demand for education which it has stimulated. It remains for us to recognise them for what they are and to be able to use them for that purpose "

"The absence of political will for educational reform and transformation has been the strongest constraint Our miserable performance in the efforts to eradicate illiteracy was largely due to the lack of political will for achieving this objective".

In other words the explosion of knowledge and its fantastic applications through appropriate technologies of organisation and action bring any desirable change of education within our grasp, provided we have the wisdom to discriminate and choose and the will to act and achieve. What technology offers as possible can always be achieved by an upsurge of moral and humanistic forces and good social engineering in a given society even if it is economically under-developed. On varying measures almost all societies have failed to achieve the desired reforms of education, if we have failed to make any dent on the colossal problem of illiteracy or to provide eight years universal primary education as proposed by the Sargent Report and its subsequent revisions and modifications and have taken hardly any steps to gear education to the task of national development as projected by the Kothari Report, it is also true that the pursuit of life-long education and the change to the learning societies as visualized in *Learning To Be* remain only in the realm

of discussion and conceptualisation everywhere, and few significant initiatives have been taken to achieve what is clearly desirable and not beyond the capacities of contemporary man in any part of the world.

five major constraints !

Why has educational change lagged behind the pace of change in scientific, technological and economic aspects of life? Confining myself to the Indian situation, I would list five major constraints and difficulties which must be overcome with determination and ingenuity of we have to make any headway or even merely catch up with the neglect of the past.

inherent inequalities !

1. An educational system only reflects the realities of its larger socio-economic environment. While education helps social change, it is itself determined by social realities. The democratization of education often remains an illusion if inequalities and privileges are built into the functioning and values of the socio-economic system. If the urge for egalitarianism in education is genuine and dynamic it will surely contribute to socio-economic change as well as educational transformation. But the prospects of educational change are limited if the socio-economic environment is not favourable and even resistant to change.

absence of political will

2. Problems concerning the expansion of educational facilities at various levels and the qualitative improvement of educational content depend upon the goals of society and

"We need to break the traditional conservatism of educational institutions by a more flexible and creative outlook that can generate and nurture innovations and offer greater facilities for expression and fulfilment to diverse groups and individual aptitudes in our vast and pluralistic society".

the priorities it sets for reaching these goals Education embraces the totality of society, but the State or Government is the most important instrument for bringing about change. The allocation of resources is determined by societal priorities determined by the State, and, in India education has so far received a low priority in terms of resources in spite of loud professions of its over-riding importance Eloquent words have not been matched by even minor deeds and the gulf between thought and action has widened, resulting in lethargy and hypocricy instead of intense and sustained action by all concerned. The *absence of political will* for educational reform and transformation has been the strongest constraint. Our miserable performance in the efforts to eradicate illiteracy was largely due to the lack of political will for achieving this objective. Much preparation is needed for literacy campaigns, and in the Indian situation it is indeed a formidable task to improve upon the innate intelligence and abiding culture

"No worthwhile change will materialise unless the teachers are ready, the parents approve and the students understand and accept. And this can happen only when teachers are fully involved in planning and decision-making at all levels and regular consultation takes place with parents and students."

of oral tradition by a new culture of the written word, apart from the massive effort needed to make millions literate and sustain their literacy. But the provision of literacy has been a task of over-riding importance which our society failed to tackle adequately. Let us hope that under our new Government, with its deep commitment to freedom, justice and development, we can now generate a new will and enthusiasm to eradicate illiteracy in a way that the native intelligence and traditional culture of the illiterate are further enriched and they gain access to a tool which is essential to civilised life and larger communication.

traditional conservatism

3. Another powerful constraint is the strong, ingrained conservatism of the educational system which breeds its own vested interests and sacred cows in the form of institutions and their managers who prefer habit and tradition to change and innovation Our universities are such institutions and often their autonomy is used to preserve outmoded tradition and offer resistance to change. The dead-weight of tradition and vested interest stands in the way of experimentation and change, resulting in a state of unreality and irrelevance We need to break the traditional conservatism of educational institutions by a more flexible and creative outlook that can generate and nurture innovations and offer greater facilities for expression and fulfilment to diverse groups and individual aptitudes in our vast and pluralistic society The superficial attractions of uniformity must be rejected in the interest of higher

quality and greater creativity which result from decentralisation, flexibility, local autonomy and innovative action.

gap in words and deed

4. These essential elements for a wide participation in the process of educational change could not be realised on account of defective planning and lack of adequate implementation. Research and Training Programmes were neither developed adequately nor applied to qualitative improvements which failed to materialise. The institutional infrastructure remained almost the same in form and functioning as was inherited from the colonial period, and in several ways good institutions suffered from neglect and inertia. Quality declined; only quantity exploded, and we continued to project with pride inflated statistical information which ignored the rot that had set in It is time now to establish a better planning machinery, to extend and improve upon training facilities and, above all, to ensure real and speedy implementation by active participation of all concerend and a dynamic mobilisation of societal resources through decentralization and local initiatives

"While national policies must be finally made by people's elected representatives, supported and assisted by the best technical knowledge available, such policies should be evolved in close consultation with those who are intimately involved in the educational process, that is, the teachers, parents and students."

giving teacher his due

5. The first and the most important step, however, is to recognize the primacy of the teacher in the educational process and give him a central role in bringing about educational change. No worthwhile change will materialise unless the teachers are ready, the parents approve and the students understand and accept And this can happen only when teachers are fully involved in planing and decision-making at all levels and regular consultation takes place with parents and students The Indian educational scene continues to be dominated by bureaucrats and politicians relegating the teacher to a depressed status and passive role, and neglecting the parents and students Since Independence the power of the politician and the stifling influence of the bureaucrat have tended to increase in the field of education at the expense of teachers and parents, and students have not been in the picture at all To ensure more effective and meaningful reform, we must now reverse those trends and give the teacher his due. While national policies must be finally made by people's elected representatives, supported and assisted by the best technical knowledge available, such policies should be evolved in close consultation with those who are intimately involved in the educational process, that is, the teachers, parents and students.

The decade after publication of the Kothari Commission's Report has witnessed vast changes at a pace and on a scale unknown in the past. Time moved rapidly and so did the concepts and modalities of education. The growing force of democratization, the emerging concept of life-long education and the new opportunities provided by the revolutionary technologies of communication now hold the promise of joining education and culture together in a new enterprise to liberate the spirit of man, to enrich his mind and to project and practise human values in the service of man and his humanity. We are, indeed, at the threshold of the learning society.

The education of the future providing for man's total life span must be oriented to his fulfilment as an individual person, as a creative worker, and as a member of his society at local, national and global level. The educational programmes and processes should be related to the needs of contemporary man looking toward a fast-changing future. The integrity, ability and wholeness of man, achieved through an appropriate system of education is the most precious asset of the individual and his society, and it is this aim which needs now to be translated into curricular content. Such a curricular content of educational programme and experience needs to be conceived and planned in the context of life-long education aiming at a fresh adventure in learning that is primarily directed to the development and sustenance of the learner's integrity as a free and creative person and his independence of mind and spirit.

When knowledge grows fast and technical skills change rapidly, the most abiding element of education is the making of the whole man who can adapt himself to change both materially and psychologically and become master of his own destiny. The foundations of life-long education and the capacity to adopt and innovate require an over-riding stress on the building of character and the strengthening of the moral and spiritual dimensions of personality.

The essential five linkages

The education of the emerging future in our country calls for at least five new linkages, embodying national tasks and objectives of importance for our

own model of development In the first place, we should try to link our old and authentic past with the living present of existing realities and the emerging future of goals and aspirations in the search for a national identity. Only then will we know what kind of person we should nurture through a system of life-long education and what life-styles and values should be projected and cultivated. Secondly, a linkage of the urban elite and the rural people through educational opportunities and suitable institutions and programmes of formal and non-formal learning is necessary for achieving some real and meaningful national integration. Thirdly, the youth need a closer sense of belonging and fuller involvement with the making of the larger society. youth power and people's power can together achieve developmental tasks for a new quality of life. Fourthly, a linkage of science and spirituality implies that living traditions from the past should function along with the appropriate technologies of modern science that we choose consciously for our own way of life and our indigenous model of development Lastly, the world of formal education should be linked to the world of work and world of culture to serve the needs of life-long education and the making of the whole man This is the most promising direction of educational change In addition to formal education and cultural learning, we need education through work, for work and from work to the wholeness of life, to the flowering of an integrated personality and a harmonious society. Such an approach will reveal numerous learning situations of formal instruction, non-formal education and cultural learning corresponding to the requirements of diverse individuals and groups, different aptitudes and needs, and various phases of the life-cycle. I have mentioned these five linkages very briefly. Their relevance to the larger reconstruction of education for human development and quality of life is undoubted.

"The education of the future providing for man's total life span must be oriented to his fulfilment as an individual person, as a creative worker, and as a member of his society at local, national and global levels."

and five priorities

If a new direction on these lines is to be given to our educational development, I suggest five priorities in the shaping of an over-all educational policy. These require significant shifts of interests emphasis and resources. Firstly, a shift from excessive financing of higher education to the improvement of mass education would result in greater social justice and productivity of education; at present, the urban elite who is the main beneficiary of higher education is having the lion's share of the national cake at the expense of the rural people. Secondly, a shift from traditional disciplines of knowledge to man-based knowledge of real problems, themes and projects would make the educational process more interesting and relevant. Thirdly, we need to shift the emphasis from formal to non-formal education, thereby generating greater freedom and flexibility. My fourth priority would be a turning from the present obsession with academic learning to character-building, cultural learning and practice of human values; this is, indeed, essential for the making of the whole man who should be conversant with great ideas, develop the capacity to manipulate things for the ordering of a better life, and cultivate the art of human relation and harmonious and creative living. Lastly, in the planning of education, we need a shift from general, hierarchical, time-bound education to vocational and recurrent education and training, flexible, employment-oriented and especially geared to the needs of the under-privileged sections of society, and in particular the women and children in rural areas and urban slums. Such priorities and shifts of educational practice will contribute to the enrichment of human resources, increased productivity, social justice, national integration and better family planning based on population education.

It is clear that a national policy of education or even policies at the State level cannot now emanate exclusively from the Ministries and Departments of Education as constituted at present. A more integrated approach to the generation and use of human resources calls for a fresh approach to policy-making in the field of education which now embraces the vast worlds of work and culture as well as the span of life-long learning. The links between policy, planning, financing, administration and management need to be strengthened. If policy is weak or nebulous, the whole chain of action becomes ineffective

"A linkage of the urban elite and the rural people through educational opportunities and suitable institutions and programmes of formal and non-formal learning is necessary for achieving some real and meaningful national integration".

The nation-wide debate has started and Seminars and Symposia, with their rituals of inauguration and VIP speeches, will surely multiply in the national habit and tradition of gathering thought of all types and from diverse sources. Will this lead to a really wise and operative national policy containing plans as well as their time-bound implementations, and ensuring that policies will at last move from words and intentions to purposeful action ? □

The will to act we need most !

Prof. Rais Ahmed

The author says a lot of debate and exercise on the needed educational changes has been undertaken from time to time. This implies that the basic framework of propositions already worked out would be generally acceptable to the people as the same was based on a realistic appraisal of the role of education. The author feels any departure from that framework will only accentuate controversies. He says lack of implementation of the National Policy on Education, whether it is universalisation, 10+2+3 or vocationalisation, is another area of criticism. This leads to the conclusion that the Government consists of affluent groups who don't intend to implement the good promises they make. The author is of the view that to work out a plan and to act on it is a challenge in itself.

IN ASKING THE QUESTION why educational promises made by the Central or State Governments remain unfulfilled or why educational policies adopted by Parliament or even incorporated in the Constitution remain unimplemented, one is asking at once a very naive and a very complex question Naive, because a democratic system cannot survive without at least appearing to *promise* the changes which people perceive to be necessary Eradication of poverty, equality of opportunity, social justice, and equal respect for religions, etc have all got to be promised—no matter what the political complexion of a party in power or out of power may be Complex, because major educational changes cannot be brought about in isolation ; every such change has an impact reaching out to other activities and structures in society and Government, and *vice versa*, what policies, programmes and procedures other sectors have adopted become a constraint on educational change. It may be noted that various levels and types of education are handled by half a dozen ministries and departments of the Government. This is in the very nature of education, but it is often completely left out of consideration. Therefore, the sum total of vested interests, general convenience in letting things be as they are, and traditionalism combine to force the proposed changes to remain on paper.

education's unchecked growth

However, the demand for education keeps growing because of its association with employment and status in society, as also because of increase of population, all of these again being factors external to education. Hence, "more of the same" becomes the rule—and a vastly expanded, but a largely disoriented system creates its own problems, which become more acute as time passes, and it could build up dissatisfaction and frustration to such an extent that the entire society may be engulfed by it. This

"Education has to be seen in the context of society, governmental structure, history and the evolution of our knowledge of human behaviour, if we are to appreciate the fact that there is no alternative but to squarely face these difficulties and to think of educational changes concurrently with so many other changes."

is what we are experiencing today and our experience is not unique—many developing countries have the same problem.

Education has to be seen in the context of society, governmental structure, history and the evolution of our knowledge of human behaviour, if we are to appreciate the fact that there is no alternative but to squarely face these difficulties and to think of educational changes concurrently with so many other changes. Naturally, a change of such a magnitude requires a clear vision of the goals of our society and a determined strategy and plan to achieve them. Ambiguities in this respect either due to pragmatism or expediency or perhaps in the very nature of the State almost always ensure that no large scale change will come about and only a few marginal, though sometimes spectacular, steps will be taken.

In my opinion the Constitutional Directive as well as the National Policy on Education implicitly, or even explicitly, required changes of such a far-reaching kind that they could not be effected by the Government through the Ministry of Education alone. The present exercise of countrywide discussions, though extremely welcome since it will create large scale awareness of the problem, has the danger of again remaining "a baby" of the Education Ministry. The challenge that is education has to be clearly perceived in all its dimensions, and then alone the *nation* may agree on a specific new design, implementing which would become the responsibility of the Government as a whole, by which people will test it.

circumscribed, to begin with !

We may recall that for centuries education was the privilege of the well-to-do, the clergy and those that wielded power in any society. The purpose of such education was to groom the individual with literacy, familiarity with tradition and culture, and general refinement. The concept of the state itself was in a nascent stage ; hence education was organized in private schools, often run in mosques, temples, churches and even in homes, on individual or religious initiative. It is a fact that the rulers were often allergic or antagonistic to education lest it should put other ideas in the minds of the students, or make "undesirable" literature accessible to them. Prominent examples can be given from practically every country, (of the slaves or labourers or the lower castes, or women being kept away from education), and no less from India. When Macaulay's idea of schooling in India through the medium of English was debated in the British Parliament, fears were loudly expressed that this may lead to disaffection and revolt.

then expanded to help alien rule

Perhaps, as a late aftermath of the industrial revolution, and the evolution of nation-states, the concepts of industry needing educated manpower for greater productivity, and of the State having the responsibility for general civic amenities came to be accepted, and some States adopted universal elementary education as their policy. Even so, it was ensured that educational curricula did not contain matter prejudicial to religion or government or in general, of a controversial nature. Real problems of society—current social and political matters, requirements of proper nutrition or sanitation, exploitation of the farmer or labourer or other hardships were kept out of the courses. Education was for the individual,

"The present exercise of country-wide discussions, though extremely welcome, since it will create large scale awareness of the problem, has the danger of again remaining 'a baby' of the Education Ministry."

and had to be paid for by him—and educational institutions stood aloof from the general stream of life. Distance from the life of the people went to such an extent that in India, practically all books were either imported from England or modelled on the same lines. That is, if education had become inevitable, it had to be straight-jacketed.

but led to knowledge expaned !

Furthermore, since limited education of the individual had some advantages to the State, and in any case it was difficult to contain the spread of education, the State quietly went over to the idea of using education as instrument of its own policy. However the coming into existence of the Soviet State in 1917

based on the Marxist philosophy of *knowledge having the positive purpose of changing the reality*, education received a new status and a priority; the *public had to be educated at government expense* and the content of education was to be such as to rid people of many traditional ideas including acquiescence in exploitation, or fate, and it included ideas of socialism, of the power of man to overcome obstacles and use natural resources to create a new kind of life. Many of the older generation among us would recall how violently this system of education was condemned, particularly in the West, as propaganda, and as a great intellectual injustice to innocent children who went through this kind of education Philosophically, one may say that in all cases, states were using education to serve their own purposes--most of the countries were using it to maintain status quo, the Soviets were using it to change old society into a new one, closer to their ideals

speeding up social change !

It is notable that the freedom movement in the colonies, and most strongly our own movement in India was sharply critical of the status quo style of education where uncritical acceptance of the ideas handed down by the teachers was in vogue and where the entire freedom struggle was a non-event. Ignoring problems of real life, glossing over controversies which agitated the whole nation was not contributing to "objectivity" or "dispassionate" consideration of problems, as some claimed In fact, silence on these matters was the most eloquent way of siding with the government Moreover a new design of education was already emerging in the minds of our leaders because they too had to face up to the problem of reconstructing Indian Society in all its aspects as soon as political power came in their hands. Change, and not status quo because the motivating factor, in our case, too, and it still remains our unfulfilled desire.

"The all pervading nature of education is also now well understood in the sense that it does not come only from books, or teachers or the schools, and that it comes, like cosmic radiation, from all directions and many sources. The mass media could educate or under the effect of education not only through labelled 'educational' programmes but from all that is presented to the public."

and economic development

It is again a fact of history that the Second World **War dealt a** grievous blow to imperialism and many **countries of Asia, Africa** and elsewhere became in**dependent. In most of** the developing countries, therefore, the problem of social reconstruction and economic development has led to the establishment of a clearly enunciated policy that education has not only a personal or individual role but that it could be a great instrument not only to unite the people but also to bring about rapid developments in production of commodities and finished products and in setting up community services with regard to communication, transport, health, sanitation and entertainment, and that it could contribute to collection and collection of data and its interpretation, planning and implementation The power of education as a system has come to be recognised in shaping the future, and an integrated view of education with other sectors of activity has come to be accepted. The power of education in shaping human minds is fully appreciated both for creativity and for the values which are needed to be inculcated if national interests such as integration of people of different languages, cultures and religions or a sense of pride in making independent judgment on international issues, and other problems of development are to be protected and advanced. The all-pervading nature of education is also now well understood in the sense that it does not come only from books, or teachers or the schools, and that it comes, like cosmic radiation, from all directions and many sources. The mass media could educate or undo the effect of education not only through labelled "educational" programmes but from all that is presented to the public

"If education would help in understanding the natural environment, the social reality and human behaviour, if the competencies required for co-operative living and increased productivity would be paid due attention, education would be a strong factor in creating a more integrated and satisfied community."

education to help achieve goals

It is in this sense that a developing country has to have a total view of what constitutes education and it could then make deliberate use of education to work towards the desired future The vision of the future should itself be clear · do we want a secular, socialist, modern India built largely with our own technology, encouraging the good traditions of our culture and eradicating those that divide or lead us to irrationalism; do we want a life based on frugality, conservation of energy and other resources, with people competent and creative in the sciences and arts, producing enough and distributing judiciously in order to remove the growing disparities ? Or do we want to basically maintain our economic relationships of importing the complex and exporting simple machines and raw materials, of technological dependence on the advanced countries who can use this position to pressurise us on numerous economic and political

issues, of allowing the good life of a minority to percolate down decade by decade to the lower strata of society, to walk in the footsteps of Western society whose consumerist and wasteful life styles are rapidly depleting the non-renewable resources of the world, and which seem to need the scare of a nuclear holocaust to sustain a certain level of employment in their countries ?

with suitable strategies

If the vision is clear, the objectives can be achieved by working out suitable strategies and plans in which every sector will be coordinated. For example if rural life is to be improved, then in each Block, suitable agricultural support in materials, technologies and technical manpower will be needed; roads, electrification, telecommunication, health and sanitation arrangements will have to be set up, each requiring an infrastructure of facilities and related manpower well versed in a variety of needed technologies educational and cultural facilities will have to be created as also commercial and simple banking arrangements. The interdependence of all this and hence linkages amongst the sectors within the Block are self-evident and they require to be overseen and operated through the involvement of the whole community Educational structure built at all levels in this spirit, and supported by the media from the district to the state and national levels would really be an inseparable part of the transformation of our society Students would be able to learn relevant technologies in school as well as in the field, a variety of resource persons could be available to suggest a relevant curriculum and supplement the work of full-time teachers, and those who pass out would not be misfits as far as jobs are concerned, or alienated from their families because of the gap between what is taught in the school and what is practised at home or in the community. If education would help in understanding the natural environment, the social reality and human behaviour, if the competencies required for co-operative living and increased productivity would be paid due attention, education would be a strong factor in creating a more integrated and satisfied community Such an education would be productive in every sense of the term, and it would generate resources rather than be a consumer of "scarce" resources.

"It is accepted by all that essential programmes such as family planning, environmental protection or health for all cannot be effectively implemented without massive involvement of the educational sector."

linked to a socio-economic channel

The idea of looking upon education as a dynamic or interactive component of the entire societal system is now well established. A number of countries liberated after the Second World War understood it essentially in this manner and they were able to bring about socio-economic and educational reconstruction simultaneously. A reading of the Preamble of our own Constitution would also show that we cannot move in the direction of achieving those laudable aims without full involvement of education. The stated objectives of the Seventh Plan focussing on food, productivity and employment are all related to education, spread of skills and creation of new knowledge. On the other hand, the massive tasks of universalizing elementary education and removing adult illiteracy cannot be fulfilled without active participation of all developmental agencies and undertakings and without involvement of the entire community. Vocationalization and work experience need part-time professionals to teach and often require sharing of institutional facilities and they cannot be achieved without inter-agency and inter-department support. On the other hand, it is accepted by all that essential programmes such as family planning, environmental protection or health for all cannot be effectively implemented without massive involvement of the educational sector. Hence linkages are what we have been talking about at least from the Fifth Plan onwards—"lack of linkages" appearing dozens of times in planning documents as a cause of failure of schemes, and "establishment of linkages" as the guarantee of success. It is little realized that uncoordinated activities often work at cross purposes, like the famous case of the encouragement by one Government department of the carpet-making industry in Kashmir, leading to large scale employment of very young children in this industry and hence drawing them away from the schools.

"We cannot resolve our dilemmas in education by adopting policy parameters which will take us away from the Constitutional commitments and responsibilities of socialist, secular and democratic state."

education as investment

In India, not only the pre-independence thinking, but also the reference to universal elementary education in the Constitution (1950) as a priority, by implication even above the "minimum needs"; the clear paradigm in the Science Policy Resolution (1958) that the establishment of a welfare state requires industrialization (which includes modernization of agriculture) and this in turn needs the "most vigorous measures" in education in science, and training in technical skills the enunciation in the Report of the Education Commission (1966) that "the realization of the country's aspirations involves

changes in knowledge, skills, interests and values of the people as a whole" and that the economic development of a traditional society is indeed a "great ascent"* and involves change on a "grand scale"* for which "there is one instrument, and one instrument only that can be used . *"Education"***, and finally the statement in the National Policy on Education (1968) that the "Government of India is convinced that a *radical reconstruction of education* on the broad lines suggested by the Education Commission is essential for economic and cultural development of the country, for national integration and for realizing the ideal of a socialistic pattern of society"—are all in harmony with the larger pattern of *education visualized as a part of the overall development strategy.* One cannot go a whole century back on these ideas to revert to small reforms, to leaving education at the mercy of private initiatives, or to confine it merely to the adornment of the individual. A serious task of designing education as a part of the other social and economic changes—which should also be spelled out—will have to be undertaken. Financially, therefore, educational expenditure will have to be seen as *investment in development*, and not merely as expenditure on social service as is actually the case. Education, in the scheme of things, is not even in the "core sector" at present !

exercises already undertaken !

What are the detailed educational changes at primary, secondary or university level, in curricula and methods of teaching, in structure and management of the whole system and of institutions, has been fortunately worked out by a large number of very competent groups. Very recently the Planning Commission had set up several working groups to prepare for the Seventh Plan and a consolidated report is available. More than two hundred experts and officials were involved in the exercise Only in March 1985 the two National Commissions on Teachers in Schools and in Higher Education have submitted their reports to Government after interacting with thousands of teachers, administrators and public men. They had to take an overview of education in all its aspects in order to make recommendations to improve the system. The Vice-Chancellors of all Indian Universities discussed general educational and urgent university level reforms for a whole day, set up a Task Force which met for two long meetings and finally worked out a well-reasoned document for the University Grants Commission which accepted it and forwarded it to the Government With the present document, and related seminars, probably thousands of people will have participated in discussion

* Words from Helibroners Book the Great Ascent, Harper and Row 1963.

**Words of the Education Commission's Report, emphasis original.

lack of implementation, a snag

The on-going debates already show to any person familiar with the Report of the Education Commission and hence the National Policy on Education already accepted by Parliament in 1968, and the positive recommendations made by the aforementioned bodies that the controversies in the seminars centre around *seeming departures* from those recommendations. Therefore, we are moving towards a conclusion that the basic framework of propositions already worked out would be generally acceptable to the people simply because they are based on a realistic appraisal of the role of education in social change, and on the concrete pattern of needs which prevail in our country. Departures from that framework will only accentuate controversies and preclude action. We cannot resolve our dilemmas in education by adopting policy parameters which will take us away from the Constitutional commitments and responsibilities of a socialist, secular and democratic state. The greatest concern has been expressed about lack of implementation of the National Policy on Education : whether it is universalisation or 10+2+3 or vocationalisation, or even spending 6 per cent of GNP on education. If we had implemented better, perhaps our problems would not have been as acute as they are. The popular demand already seems to

"The popular demand already seems to be that the policy already accepted may not even be debated as much as the proposed ways and means of implementation, which have not yet been drafted. Lack of implementation opens the Government to the criticism that the Government is of the affluent groups and the affluent are not affected by the poor quality or performance of our institutions, and hence they don't intend to implement the good promises they make."

be that the Policy already accepted may not even be debated as much as the proposed ways and means of implementation which have not yet been drafted. Lack of implementation opens the Government to the criticism that the Government is of the affluent groups and the affluent are not affected by the poor quality or performance of our institutions or by their inability to serve the disadvantaged, and hence they don't intend to implement the good promises they make. It may not be out of place to quote a few lines from a section in the Report of the Education Commission, written 20 years ago, on the "Need for sustained and vigorous implementation". It is said therein : "All the same, the development of education in the post-Independence period leaves much to be desired · and as the Government Resolution appointing this Commission has pointed out, a 'wide

(*Continued on page* 65)

These are no universities !

Justice P. N. Shinghal

The author passionately pleads for some quick moves to restore universities to their proper and exalted position. Our universities, he adds, need to be made temples of real learning where students go every day with a sense of reverence, humility and hope. The measures to achieve the objective as suggested by him include ruthlessness, if necessary; restricting admisssions; appointing only men of learning, eminence and character as Vice-Chancellors; a new role with enlarged power for the UGC; and insulating university affairs from political interference.

THERE HAS BEEN SO MUCH TALK ABOUT REFORM or reorientation of university education that I am convinced a big change is on the way. What is it, remains to be seen. While I am anxious for a substantial measure of change, I must confess I shall not welcome a change merely for itself. I am old-fashioned, and what will give me real satisfaction is a scheme which will restore our universities to their old glory.

I am not aware of the current thinking on the likely changes, or trends of changes, in university education. It may therefore be that what I have set about to write may be wholly irrelevant or not enough, but, being unaware of the developments, the best I could think of saying is to state some fundamental points which may perhaps fit in any scheme that may be forthcoming.

A university is a place of universal learning. That basic character must be restored, and once again those who enter its portals should have the pervading feeling that they are entering a temple of learning. They will then go every day to that temple with a sense of reverence, humility and hope. What all has happened to take away that feeling should be removed, even ruthlessly if necessary.

restore universities to their exalted position

One unpleasant but unavoidable way of doing so is to restrict admissions. Only those who are able to convince the university authorities that they are real seekers after education, should be admitted. Those with unsatisfactory earlier academic performance, or those seeking admission for other reasons than acquiring education, should not be admitted. Political or other extraneous considerations should not be allowed to prevail. But the university's fiat in that respect should be so honest and clean that

its objectivity should convince every one It should in fact be the herald of its new environment. When no one will be able to point out a single case of favouritism in admissions, that will carry conviction with every one and facilitate the launching of the effort to restore universities to their proper and exalted position

the vice-chancellors we need !

Vice-Chancellors of universities used to be men of great learning and character and students prided themselves by their association with them howsoever remote it might have been.

It is necessary therefore that men of great eminence, learning and character should alone be appointed Vice-Chancellors of universities To make that exalted office attractive enough, the emoluments and conditions of service of Vice-Chancellors should be raised fairly high so that they have no compeers in other spheres of employment and their office and personality carry respect everywhere Care should also be taken to ensure that political considerations do not enter the field of selection

As it happens, the Chancellor, or Visitor, has a definite role in University administration and management It should be ensured that he is above and beyond political approach and all his decisions in university affairs are his own The State Education department should have no say in it, and should not even know what the Chancellor is going to decide in matters before him.

"Men of great eminence, learning and character should alone be appointed Vice-Chancellors of universities. To make that exalted office attractive enough, the emoluments and conditions of service of Vice-Chancellors should be raised fairly high."

a new role for UGC

The University Grants Commission has been in existence for quite some time and I have a definite feeling that it requires drastic reorientation Merely doling out grants cannot be the sole object of a Commission concerned with university affairs The Commission should therefore be reconstituted into a University Commission after making such amendments in the existing Act as may be necessary or rewriting it altogether The Commission should have men of all-India eminence, erudition and experience, and all of them should be whole time Members

Five or six Members may be sufficient, but each one of them should be a carefully picked up man so that he may command respect throughout the country. Once again, care should be taken to exclude politicians from such appointments The idea mainly is that the University Commission should be in overall charge of the country's university education without impinging on the autonomy of the universities. In extreme cases, it should have the power to derecognise university degrees and to give decisions on any complicated or controversial matters that universities may like to refer to it for final adjudication

nothing but meritorious teachers !

A university used to be known by the teachers on its campus, and students used to select their subjects of study with an eye on the teachers at whose feet they were to study and learn. They should therefore be selected entirely on merits, and in making their appointments, state or regional considerations should not be allowed to enter Provision should also be made for the evaluation of the work of every teacher once in two or three years, and unsatisfactory reports after two consecutive scrutinies should, according to the rules governing the appointment of the teacher, enable the authorities to terminate his employment. The rules may provide for a golden hand shake for such outgoing teachers in case where that is deserved for other reasons

students in university management

Students should also have some say in the management of the affairs of the university. The rules in that respect should lay down the procedure and generate in the students a sense of responsible criticism or suggestion, for then alone will it have a chance of being accepted and implemented.

Standards of education and the determination of syllabus is a task by itself The stature of a university depends upon them. They should therefore be determined with the approval of the University Commission and with a genuine effort to carry it as far and as high as possible. The system of examinations should be drastically changed to suit and meet the present situation.

Universities should introduce the concept of "University Lectures". Renowned teachers and other persons of eminence may be invited to deliver such lectures on non-working days. The lectures should have such educative value that students should look forward to them and crowd the arena where they are delivered. The lectures should be open to all. They should be such that those entering the campus may have a pervading sense of true reverence and expectancy unknown elsewhere.

As I have said, a university is a place of universal learning. A teacher or student should be known and respected there according to his erudition and attainments That should be the real yardstick to measure w[illegible] who. □

How higher education can serve our ends

Dr. Madhuri R. Shah

How higher education can help meet the aspirations of our people and prepare them to enter the twenty-first century as a dynamic, vibrant nation? It is only through saving ourselves from 'being mere slaves to the system and by maintaining equity and efficiency tempered with human values, says Dr. Madhuri Shah and adds education should enable students to be committed to truth and learn to rise above prejudices of caste, creed, community, wealth and privileges. She feels students must be helped to develop rationality and reconcile personal interest with larger national interests.

HIGHER EDUCATION IN INDIA has experienced exceptionally high rates of growth ever since the country attained its Independence 38 years ago. The number of colleges and universities since 1950-51 has increased from around 700 and 18 to more than 5500 and 140 respectively. Around 100 new colleges start functioning every year which means one new college every 3 or 4 days. The enrolments are currently rising at about 7 per cent per annum signifying a doubling of the statistic every 10 years. It is estimated that more than 4.8 per cent of the country's population in the age group 17-23 is currently enrolled in our institutions of higher learning.

light and shade

The history of our education system is one of both light and shade, with some outstanding achievements alongwith several failures. The present unsatisfactory state of affairs, if I may use that term instead of the more fashionable word 'crisis', is due primarily to uncontrolled expansion, inadequate inputs of money, materials and talent, varying standards, to weakening of student motivation, growing educated unemployment, and to the political and other forms of interference in the working of universities Inspite of all these handicaps and disadvantages, a number of reforms and programmes of educational reconstruction have been taken up hopefully and my own feeling continues to be one of strong optimism linked with determination. I strongly believe, we are entering a new and more fulfilling era for higher education, different in its characteristics and motivations, but rich in its responsiveness to the needs and creative urges of our people. Today's baffling problems and trials, it is my firm conviction, will in the long run lead to a stronger, more sensitive and a more purposeful system of higher education.

decline in quality

Fortunately our best students are as good as ever, if not better and the contents of many of our courses are also of a high order It is also to be recognised that some of our teachers and university departments are doing outstanding work winning national and international acclaim. In fact if there has been a steep build-up of planning and developmental activities in the country over the years, the credit must in no small measure go to the universities and other institutions of higher learning responsible for the prepara-

"The present unsatisfactory state of affairs is due primarily to uncontrolled expansion, inadequate inputs of money, materials and talent, varying standards, to weakening of student motivation, growing educated unemployment, and to the political and other forms of interference in the working of universities."

tion of the country's high grade work force. However, all this cannot and must not conceal the painful reality of the general decline of quality in our university education, and of the low standards of attainment of our graduates in a number of colleges

why higher education is subsidized ?

While the quality of university education continues to be far from satisfactory in a number of institutions, the social demand for higher education continues to grow But the main reason for this anomaly is perhaps not far to seek. Several rate of return studies by economists and students of economics of education have revealed that as university education in this country is highly subsidised, investment in higher education continues to be a profitable proposition from the individual's point of view in spite of its low quality In other words the life long earnings of those who receive higher education continue to be substantially higher than the average earnings of those without such education In the case of girls university education also confers important cultural and social advantages of considerable economic significance

the essential four ingredients

A new educational policy is on the anvil The Prime Minister has been very keen on revitalising the entire system in order to make it more relevant and responsive to the needs of the individual and national development. To my mind the educational policy for tomorrow must have four basic contents—ethical social, academic and vocational At the ethical level a student must develop a passionate commitment to truth, beauty and goodness At the social level, to achieve national integration, he must learn to rise above the prejudices of caste, creed, community, wealth and privilege To be a useful member of the society he must learn to reconcile his personal interests with the larger national interests. At the academic level instead of acquiring knowledge merely by memorising, he should develop a life-long thirst for knowledge—to learn, to think, to analyse and to conclude. Above all there must be an abiding commitment to reason and rationality. Vocationally he must learn to earn by choosing an occupation for which he has a natural aptitude. It is not mere money but better management and execution of educational policy that can give true content and meaning to education.

more jobs be created !

Questions concerning higher education are discussed all over the world. In many countries there is a growing awareness that education, especially higher education, is a major instrument for economic and social development. But since there could be no excellence in higher education unless its base is also sound, it follows that the whole edifice of education determines the quality of the whole edifice of development. There are also concerns like ensuring access to higher education, especially for the disadvantaged and the less privileged sections of the population. Then there are problems arising from overcrowding in institutions and the inevitable consequences of declining standards It is also not uncommon that the number of unemployed graduates is increasing at an alarming pace However, this phenomenon could be more accurately described by saying that the creation of employment opportunities is lagging far behind the availability of educated job seekers.

three challenges to face !

We are living in a world in which life is increasingly conditioned by the expansion of knowledge and its

"I strongly believe, we are entering a new and more fulfilling era for higher education, different in its characteristics and motivations, but rich in its responsiveness to the needs and creative urges of our people."

application New knowledge opens up vast and hitherto unimagined possibilities for raising productivity, overcoming hunger, solving the problem of energy and raw materials and in meeting the material and cultural needs of man. These changes also condition our habits and attitudes. The challenge before us, therefore, is to prepare ourselves to take those changes in our stride as they come, also be instrumental in their advent and to manage them for our common benefit. Each of the above three processes is distinct and calls for specific and well defined action.

unimaginative expansion

In most developing countries, considerable attention was paid to education soon after independence In

most cases, the emphasis in the first instance, was on expanding what was already available. This expansion no doubt brought increased educational opportunities, but quite naturally, the wisdom of unimaginative and quantitative expansion began to be questioned and the need to take into account goals of national development in terms of social, political and economic progress was emphasized. In an attempt to relate educational development to national objectives, some variations were tried in approaches to formulation of programmes and their execution and management. Nevertheless, the system essentially remained the same as was bequeathed to us by our colonial past. The system somehow does not seem to find itself fully able to visualise and assimilate the changes, and to manage them.

curriculum vis-a-vis students

It is also true that the concept of equality of opportunity needs to be understood in all its implications. While this realisation in India led to the system of reservations and numerous dispensations, our educational programmes have not yet taken full care of the variations in the potential, background handicaps and pace of development of learning capabilities of individual learners. The curricula for most courses are a predetermined, rigid package and the common thumb-rule of evaluating proficiency often results in failure to do justice to individual learners. Meanwhile, for various reasons, the curricula get loaded with more and more material with the result that the hiatus between the needs and background of learners tends to increase steeply all the time.

It is against this background that we have to look at the efforts to widen access to education through non-formal channels

reform examination system

University education has to promote excellence by providing conditions conducive to attainment of high standards of learning One of our major drawbacks has been the university examinations. The examinations have lost their credibility for various reasons too well known to need a rehearsal here. When Radhakrishnan and his team mates expressed the conviction "that if we are to suggest one single reform in university education it should be that of the examinations", they were thinking primarily of how to introduce "such valid, reliable, adequate objective examinations in the universities of India at the earliest possible time". Pursuing a similar line of thought, the UGC has been favouring for some years, the introduction of the semester system and "continuous sessional evaluation as a supplement to the present final examinations".

eliminate corrupt practices

In addition, there is need for an All-India examination at different levels which students from different universities can take on a voluntary basis. Such an examination could serve as a yardstick by which to judge the quality of a given institution's teaching and work against an All India norm. It could also serve to promote a minimum uniformity in the teaching and examination standards of different universities. The moment the conduct of university examinations becomes efficient and free from the existing corrupt practices, student and teacher motivation will improve leading to much higher standards of learning and scholarship than at present.

evolve code of conduct for teachers

The teachers are the main pivot of all education. How to raise the standards of performance and conduct of our teachers is, therefore, a question of the greatest importance for the proper functioning of our institutions. One suggestion is that each university should lay down a code of conduct for all its teachers. The teachers and their associations, however, have not been very enthusiastic about the idea. The two main reasons commonly advanced by them against the code idea are that it will certainly curtail their freedom and that such a device is also likely to be misused Since the teaching profession itself has not come forward to support the idea, the universities have no choice but to enforce it in the larger interests of education and the teaching profession itself. It need hardly be mentioned that such codes exist in many universities the world over, and that in their conduct and performance, the teaching staff are expected to adhere to them strictly Of course, special machinery will have to be devised to redress the legitimate grievances of teachers and the university authorities will have to take decisions in such matters more expeditiously.

"In fact, if there has been a steep build-up of planning and developmental activities in the country over the years, the credit must in no small measure go to the universities and other institutions of higher learning responsible for the preparation of the country's high grade work force "

depoliticise university campuses

A major cause of the administrative inefficiency and mismanagement in universities is undoubtedly political interference and the politicisation of our campuses. Regrettably much of the political activity on the campuses is of a degenerate nature based on sheer expediency and opportunism. This is a direct result of the low political standards set by the country's political parties. Appeals in the past urging them to

keep "hands off" and to set higher norms of political behaviour have invariably been in vain and the future seems to promise nothing better. We have to ask ourselves seriously whether a time has not been reached when instead of looking for help from outside the universities should not bestir themselves to eliminate from the campuses political and other disruptive activities which are unworthy of or go ill with academic interests and pursuits. After all if the Vice-Chancellors and teachers are not prepared to protect themselves from political pressures and manipulations, what is university autonomy worth, and what is it needed for ? In that case would it not be better for institutions of higher learning to be run simply as government departments ? The tragedy is that because of the inaction and lack of interest of universities, several state governments have already imposed a variety of controls over their activities and functioning which, strictly speaking, no self-respecting university should have found it possible to accept.

enact a common university law

Special attention needs to be given to the need to simplify the administrative procedure in universities which have become cumbersome and dis-functioning. A common University Act, very simple and functional for the whole country with enough flexibility to meet the needs of different types of universities in the different regions of the country, has to be evolved at the earliest

appoint V.Cs of integrity

No single matter can affect the working of a university more profoundly than the selection of its Vice-Chancellor. In a very real sense he is the keeper of the university conscience He must set the highest standards of conduct and performance by personal example and deal firmly with indiscipline or other malpractices. To be equal to his responsibilities he must have the strength of character to resist firmly the many pressures that seek to relax standards of training, scholarship and students behaviour.

remove financial constraint

The financial management of university needs strengthening, and there must be sufficient accountability to meet the objectives for which they are set up.

One of the major reasons for declining standards in university education has been the non-availability or inadequacy of finance. It is not always realised that in real terms allocations of funds for higher education have tended to decline from one five year plan period to another. The obsolescence from which the equipment lying in the laboratories of the universities suffer requires about a thousand crores to up-date them. It is only then the universities would be able to take up research and consultancy work so vital for the health and vitality of a modern university

help them plan better way !

Although our universities have been the main instrument of preparing this nation's grade scientific and technical manpower, the universities have gone about this business in a rather ad hoc lackadaisical manner showing little awareness of the fact that in the changed circumstances of today no organisation, much less a university, can hope to achieve its stated objectives without strengthening the planning process. The essentials of this process consist of systematic continuous collection of data from field, preparation of short and long term plans based on a critical appraisal of the data, effective implementation of the plans with the support and cooperation of all the agencies involved, systematic evaluation and monitoring of its programmes and application of corrective measures in good time as indicated by the feedback from the field. Most universities, as they function today are ill-equipped to perform their planning function. In most places planning or plan preparation is simply an uncritical collection of unrealistic ad hoc proposals made by different departments without any central

"At the ethical level a student must develop a passionate commitment to truth, beauty and goodness. At the social level, to achieve national integration, he must learn to rise above the prejudices of caste, creed, community, wealth and privilege."

unity or purpose. There is hardly any mechanism to evaluate and monitor the programmes with the result that everywhere there has been a considerable spill over from Plan to Plan without any substantial improvement in the quality and standards of education.

re-examine university legislation

The existing legislation for our universities has in many respects become out-dated and needs to be amended in the light of the more recent developments and their present needs.

If this situation is to cease and if the UGC is not to be regarded as a merely fund distributing agency, it is time university legislation was carefully re-examined and suitably amended to reflect the changed situation.

Those concerned with higher education will have to maintain equity and efficiency tempered with human values and save themselves from being mere slaves to a system Then alone will higher education be able to meet the aspirations of the people and prepare them adequately to enter the twenty first century when our country will be a fast changing dynamic democracy. □

Hey, don't centralize it!

Dr. Malcolm S. Adiseshiah

The author here calls for decentralisation of education system. In the formulation of new education policy he cautions against subtle moves to centralise education as he sees in the proposals contained in the document under discussion to move education to the Union List, to develop a national core curriculum, establish an Indian Education Service and set up model schools in each district. He suggests an eight-point action plan which seeks, among other things, highest priority to universalising elementary education and eradicating adult illiteracy.

THERE IS NEED TO RECALL THE DISTINCTION between education, which is learning, and the education system, which is the mediatory infrastructure of teachers, students, schools, colleges and universities, libraries, laboratories, playgrounds, curricula, text books, examinations and diplomas. The new Education Policy deals with the educational system and not with education *per se*. There is need also to recall that while education, that is, learning as an autonomous intellectual and intellectualising activity is an independent variable, the education system is a dependent variable, dependent on the political economy of development.

a hand maiden of politics !

The document on the New Educational Policy once more affirms the truth that political parameters set the pace of educational development everywhere From Adam Smith and John Stuart Mill's call to governments to invest in education as a means of making their citizens intelligent and orderly, and Gandhiji's *Nai Talim* to universalise education based on village arts and crafts because 'India lives in her villages', on to Nehru's unceasing espousal of science as the way to break through our poverty morass, culminating in the Science Policy Resolution that he introduced and piloted, and Indraji's unswerving belief in technology which is set forth in the Technology Policy Statement, and Morarji's bold decision to abolish the 250 million odd adult illiteracy scandle in the Sixth and Seventh Plans, on Rajiv Gandhi's priority to education holistically conceived, and the pride of place given to it for the first time in Independent India, education is seen as the hand maiden of

the political decision-making process. That political decision has been made, and now we academicians must translate the decision into a programme.

And for this, on the basis of the arresting analysis of the past and existing educational data set forth in the document Challenge of Education, I make these proposals for the New Education Policy :

universalise elementary education

Give the highest priority to universalising elementary education and liquidating adult illiteracy during

"The document on the New Educational Policy once more affirms the truth that political parameters set the pace of educational developmental every where."

the VII Plan, along side of various measures to increase the holding power of the elementary school which is 23 per cent at present and which can be brought nearer to 100 per cent by the end of the VII Plan, provided the poverty of the parents of the children dropping out of schools is lifted, and the curriculum is decentralised to each educational district in the country, and not by simply talking about a national core curricula, which is needed for history and geography learning, may be. The two pre-conditions, poverty alleviation and educational decentralization, are thus corollary political processes. The financial outlay for elementary education will have to increase from Rs. 1527 in 1981 to Rs. 4000 crores in 1990. Adult Education to the illiterates can be provided by a mass campaign run by students and teachers, or as part of the undergraduate requirement of every student. The first stage of the campaign which is literacy education is based on the finding that an illiterate can learn literacy in 6 months. In either case of the campaign, university and college teachers and students as well as those from higher secondary will be involved: this mass literacy campaign will be accompanied by a massive programme of production of the reading materials, audio-visual aids and electronically assisted programmes. The Adult Education outlay will be Rs. 3000 crores. The first call on the educational outlay will be those two sums of Rs. 23,000 crores plus Rs. 3000 crores during the VII Plan.

expand secondary education

In secondary education, classes IX and X will have to be expanded to meet the pressure from universalisation of elementary education, and to give students from all classes access to science and technology. A more thorough pre-vocational socially useful productive work programme should be part of the curriculum of secondary schools, so that every student acquires some self-employment skill; on the basis of the sad experience of the model schools in every district of Andhra Pradesh and the Kendras wh[...] have not been replicated anywhere, there are dou[...] about the viability of the proposed costly m[...] schools in each district.

Higher secondary education comprising classes [...] and 12 should be part of the school system, should [...] divided in each school between the academic [...] vocational stream on basis of 50:50 of the enrolm[...] should have admission based on an aptitudes t[...] should be fee-based for students whose parents e[...] more than Rs.1500 a month, and should replace [...] present examination system by cumulative records [...] vocational stream students, who should be tra[...] upto 80-85 per cent for self employment.

maintain existing universit[...]

Liberal arts and science colleges and universi[...] should be maintained at their existing numbers, [...] missions should be based on aptitude tests, curricul[...] should be based on the credit system and include [...] plying class room learning in the village or urban slu[...] university and college education should be fee-ba[...] for students from families earning more than Rs. 15[...] per month, and colleges should be freed to make t[...] own admissions, frame their curricula and cond[...] their examinations where the one state external e[...] mination should be replaced by a system of cum[...] tive records, under the guidance of an accredit[...] authority, so that the universities, comprising depa[...] ments of PG learning and research can repres[...] points of excellence, the Vice-chancellorship oc[...] pying the position of *primus interpares* rotat[...] among the heads of departments.

"Give the highest priority to universalising element[...] education and liquidating adult illiteracy during [...] VII Plan, along side of various measures to incre[...] the holding power of the elementary school which [...] 23 per cent at present and which can be brought n[...] rer to 100 per cent".

In professional education, Rs. 500 crore should [...] provided for renewing the science and technol[...] equipment of the institutions; and universities [...] health sciences should be established in each state

mobilise resources for educat[...]

Finances for this educational system amounting [...] Rs. 45,000 crores (Plan & Non--plan) for VII P[...] should be drawn from union and state governme[...] (60 per cent), from additional resource mobilisat[...] such as a cess on industry and agriculture, reven[...] from private agencies and foundations, loans fr[...] IDBI, ICFI & NABARD for educational buildings a[...] science and technology equipment, and fees, (20 [...]

(Continued on page 51)

Let the Centre look after it!

Prof. S. N. Mehrotra

In this brief note on the new education policy, Dr. Mehrotra says that the nation must be prepared to spend 10 per cent of its G.N.P. on education and if necessary levy educational cess to speed up education of teeming millions. He makes a strong plea to place education on the Union List and revamp the University Grants Commission. Among his other suggestions are : highest priority to universal elementary curriculum, and to decentralise management.

What is education's role !

KEEPING IN VIEW THE EXPERIENCE of the Education Policy of 1968, it needs to be emphasised at the outset that since education is only a sub-system of the society it can bring about changes in society only to the extent that the society is committed to change and the cadre is committed to implement the change. The political will and adequate resources are the *sine qua non* for effective implementation of the New Education Policy.

to promote unity

A national system of education is a must for national integration and unity of the country. For this it is essential that the 10+2+3 pattern of education should be uniformly implemented throughout the country with utmost expedition.

to help weaker sections

Highest priority must be accorded to universal elementary education upto the age of 14 with special emphasis on the weeker sections of the society, supplemented by non-formal part-time education for working children. Elementary schools need radical improvement to make them attractive for children.

to be pragmatic

Vocationalisation in the Higher Secondary stage (plus 2) should be a major plank of the educaton

policy. Vocationalisation should not be linked only with employment and industry. It should be aligned with agricultural, service sector, various programmes of rural development as well. It should also prepare young people for self-employment

to turn out trained manpower

A carefully planned programme of vocational and technical education should be systematically launched to meet the requirement of technically trained manpower. The desirability of involving the industry in procuring equipment and apparatus and helping the development of a relevant structure and curriculum for technical and vocational education cannot be over-emphasised.

"A national system of education is a must for national integration and unity of the country. For this it is essential that the 10+2+3 pattern of education should be uniformly implemented throughout the country."

To avoid dead ends in the educational system, proper bridges must be built between general and vocational education and also between different streams of each type of education

higher education, selective

Access to higher education and professional institutions must be selective and admissions be made on the basis of scholastic aptitude tests

The open university system with provision of correspondence courses, distance education and contact programmes is most welcome It would provide quality higher education for those who were and are unable to join a regular college or university and would be complimentary to the existing programme of higher education.

Non-viable colleges should switch over to vocational courses.

Adequate facilities must be provided to universities for pure and applied research with close interaction with national laboratories, other research organisations and industries.

The suggestion to delink degrees and jobs deserve to be tried out and its results carefully assessed.

adult literacy, a must

A strong and vigorous programme of adult education for the age group 15-35 with components of literacy, functional education and social awareness must be an integral part of the national system of education. This calls for a much greater degree of inter-departmental co-operation. Adequate arrangements for post literacy and continuing education as well as library service cannot be over-emphasised. The service of voluntary agencies must be harnessed for this purpose.

common core curriculum, a need

A common core curriculum be adopted within an overall framework characterised by a great deal of flexibility in respect of content and innovative co-relation with the environment in relation to teaching and learning process. The curriculum at all stages must provide people with a perspective in national history, inculcating positive values, building up their character and developing proper attitudes in secularism, democracy, social justice, family planning and quest for excellence.

The three language formula should be faithfully implemented.

National social service for one year be made obligatory before the award of a degree.

introduce internal assessment

The traditional external annual examination system should give place to modern internal assessment and semester system with adequate safeguards.

The national testing service should be established and scientifically developed.

depoliticise education !

The teacher holds the key position in any system of education. Therefore, adequate care must be exercised to ensure proper recruitment of teachers of requisite calibre, their training and re-training, their status and emoluments, their service conditions and security.

"Vocationalisation should not be linked only with employment and industry. It should be aligned with agricultural, service sector, various programmes of rural development as well. It should also prepare young people for self-employment."

Education should be depoliticised and teachers totally weaned from active politices.

place it on Union List

For effective implementation of the new education policy within the time-bound framework, it is absolutely essential that education must be placed on the Union List. The Centre must be prepared to play its

coordinating, unifying and integrating role in the larger interest of the nation.

The management of elementary education should be the responsibility of Zila Parishads. The service conditions of secondary and college teachers should be nationalised while retaining the private sector initiative and control of management functions. Technical education should be the responsibility of the State Government. Voluntary agencies can play a leading role in the sphere of adult and continuing education. The universities and institutions of higher learning should be truly autonomous.

revamp U.G.C.

The University Grants Commission should be re-vamped. It should be re-named as the Universities Commission and charged with the responsibility of development and administration of all universities in the country. In each state there should be a statutory State Universities Coordination Committee charged with the responsibility of development and coordination of all universities in the state. More than 50 per cent members of the Universities Commission and the State Universities Coordination Committee should consist of academicians The Universities Commission should directly deal with the State Universities Coordination Committees without the intervention of the State Government While enjoying due measure of autonomy, the universities must be made accountable to the State Universities Coordination Committee and the Universities Commission.

promote excellence

The setting up of selected special institutions for the gifted ones purely on merit is a step in the right direction. The cultivation of excellence is in conformity with the principle of equality of educational opportunities which demands that each one must get what he deserves.

levy educational cess

The management of a huge cadre of about one million educational functionaries touching the life of the entire nation of more than 750 million people is a gigantic task. It calls for adequate and effective decentralisation and delegation of powers at all stages and at all levels. Education must make the best use of modern management techniques.

levy educational cess

To repair the damage already done and restore confidence in any demonstrable break-through in education, the nation must be prepared to spend about 10 per cent of its GNP on education. For this it may be necessary to levy educational cess. The community resources must also be harnessed to the maximum extent. The suggestion to set up a National Commission on Resources for Education is welcome.

The challenge of education has got to be accepted. We must strive hard to catch up and enter the 21st century as a literate nation and a learning society. The call of science and technology cannot be denied. It must be tempered with morality and spiritualism. India must strive for this synthesis.

(Continued from page 48)

cent) while establishing in each state an education finance commission to identify financial wastes and leakages and to ensure economies (20 per cent).

beware of subtle move !

Some questions are raised and need to be answered on the document's insistence on concurrence, which is a political issue involved in this system, as against Education, that is learning, being a 1:1 relationship, and the differing roles and competences of NIEPA, NCERT and UGC: in other words the New Educational Policy formulation should not be used as an occasion for centralising education as seen in the proposal to move education to the Union List, the development of a national core curriculum, the establishment of an Indian Educational Service, and the setting up of union directed model schools in each district as referred to earlier, because education is learning that takes place in a child's hood, a student's mind, a school's working and cannot be directed from Delhi or Madras or even a district headquarters like Vellore.

revolutionise formal education

Finally, the open learning system has come to say: for each state, it will comprise an open secondary school system, and open higher secondary system and an open University (with campuses in each university) to provide both correspondence and distance education to those who have qualified for the previous educational level and distance education for those who have had no education. This will involve innovation in curricula, syllabi, printed, TV, radio and electronic media materials, lessons, learning methods and assessment systems which might also revolutionise the formal educational systems.

Twenty-three steps to put education on rails

Prof. Ramlal Parikh

The author presents here a 23-point action plan for refashioning new education policy. For this he suggests evolution of an autonomous mechanism for review of all educational programmes at regular intervals to counter inaction and apathy as is evident in implementation of the 1968 Education policy which clearly provides for a comprehensive review every five years. Prof. Parikh calls for dispensing with structural changes on contingent, ad hoc considerations and formulating new education policy on the basis of consensus for its wider acceptability and stability.

THE GOVERNMENT OF INDIA RESOLUTION on National Policy on Education was laid in both the Houses of Parliament on 24th July 1968. It had provided for a review of its implementation every five years. For 17 years there had been no comprehensive and holistic review in an objective manner. This is typical of all our educational measures. The first thing we should therefore ensure for future that there is an autonomous mechanism for review of all educational programmes at regular intervals which should not be dependent on Government initiative alone. Of equal importance is to ensure that frequent structural changes on contingent ad hoc considerations do not take place as the fate of our rising generations is at stake in every structural change. Thirdly, it is very important and crucial that educational policies are settled on the basis of a consensus of all consensus so as to provide stability and wide acceptability to it,

reconstruct this educational system !

The basic tenets on which Dr. Kothari Commission recommended the reconstruction of our educational system still hold good. The experience of last 17 years prove that it is not the lack of policies but the lack of implementation of policies that has impeded the process of change. We therefore need to be very specific in identifying the exact programmes and institutional network that we need to secure for achieving our goals. In a sense the Constitution of our Republic gives a clear picture of our national goals through the Preamble and Directive Principles of State Policy. Keeping this in the background we may spot the following programmes and measures.

action plan for new policy

(1) Article 45 requires the Government to universalise education upto the age of 14. It enjoins on the State to cover not only elementary education but also pre-primary education. The pre-primary or nursery education has spread in a chaotic and exploitative manner. It is inescapable for Government to step into it and make it free for all children by adding one or two years of pre-primary classes in the existing primary schools. We cannot afford to neglect this most receptive period of child's life in inculcating moral and social values and values of dignity of work and social and national integration. Pre-primary education, whether run by Government or non-government agencies, must be totally free and no fees should be allowed to be charged by anybody.

"An elementary Education Commission to promote universalisation and particularly promote improvement of quality through selective measures is necessary to give undivided attention to one of our most fundamental constitutional obligations. A national model act on Primary Education will also be useful."

(2) The work of universalisation of elementary education (lower-primary and upper-primary both needs special attention). An elementary Education Commission, to promote universalisation and particularly promote improvement of quality through selective measures, is necessary to give undivided attention to one of our most fundamental constitutional obligations. A national model Act on Primary Education will also be useful.

(3) The abolition of literacy is not a one-time process but a life-long process if neo-literates are to be prevented from lapsing into illiteracy. This too needs a long-term on-going arrangement at the national level to ensure its continuity and its integration with continuous improvement of functional knowledge. The prevalent part-time and sporadic efforts do not provide a lasting input. It is therefore necessary to transform all literacy classes into comprehensive community education centres to be run on the typology of Night-schools or Folk-schools by using the existing school buildings in mornings and evenings. These Centres would need one whole-time Community Education Organiser. It is possible to find resources for this even within the existing allocations by converting part-time-literacy centres into one Community Education Centre. This would then provide a stable resource support to all neo-literates.

(4) The vocationalisation of education at all stages and not just vocational courses at +2 level should be our aim. Without cultivating a culture of dignity of work it would not be possible to create ethos for vocationalisation of education. This means that we should provide minimum time for productive work experience from nursery to 12th grade and even in collegiate education. This should not be a peripheral demonstration but an integral and imperative core component of education at all levels. A corporation to purchase all goods produced by students should be set up so that there is an incentive to produce more and with higher and higher quality.

(5) At the +2 stage and at the under-graduate college level, liberal grants should be available to start variety of vocational courses to suit aptitudes of students and local needs. The present policy of giving 100 per cent grants to traditional schools and colleges and only partial grants for vocational and technical courses is of a highly discouraging nature.

(6) One agriculture and dairy high school in every block, one polytechnic, multi-purpose higher-secondary school in every district should be established in two years. These institutions will provide ethos and expertise for popularising such courses. But all such courses should be liberally supported if conventional schools also want to start it. The possessive, conservative attitude of all Technical Education Boards is a serious impediment in the development of vocational courses.

need for community colleges

(7) Nearly 2500 colleges which are sub-viable in terms of numbers should be converted into Community Colleges in accordance with the UGC scheme of restructuring of courses. Simultaneously a strict upper-limit of not admitting more than 1000 students should be encouraged for all other colleges.

"We should provide minimum time for productive work-experience from nursery to 12th grade and even in collegiate education. This should not be a peripheral demonstration but an integral and imperative core component of education at all levels."

(8) Post-graduate education should be conducted by Universities only and affiliated colleges should not be burdened with it.

(9) Three-language formula as commended by Kothari Commission should be promoted by providing substantive incentives.

(10) Production of an enormous pool of reading sources in all Indian languages cannot be done by the University Textbook Boards alone. Each university should be very liberally supported in production of books, monographs and journals in the relevant regional language of the area. Without univer-

sity teachers themselves producing their own reading and reference sources, according to their indigenous needs of each course of instruction, the stereo-typed text-books will not be widely used.

(11) A law to regulate relations of management and employees as well as management and students is necessary to rationalise the grievance settlement mechanism in every educational institution and to ensure a certain minimum equilibrium between all concerned. Education should be treated as an essential service where both strikes and lock-outs should not be normally resorted to.

(12) Experimentation should be promoted at all levels of education. Some schools, colleges, and institutions should be selected for additional project support for promoting experimentation.

(13) All schools and colleges should be provided with a librarian, a cultural instructor and a physical education officer in addition to craft|productivity teacher.

linkage between universities and industries

(14) Almost total absence of linkage between Universities and our Industrial enterprises have created a big gap between producers and users of educational output. It should be made essential for every graduate in all courses to work as an intern|apprentice for six-months before getting a degree. This period can even be incorporated in three year degree courses. A legal support by way of extending the Apprentice Act to cover students of colleges by all Industrial enterprises, including banks, LIC and other financial institutions, is necessary. Every industrial enterprise should be required to take a minimum number of students as intern|apprentice and pay stipend to students for their services.

(15) An organic and bilateral institutional linkage is necessary to ensure meaningful participation of teachers and students of universities and colleges in social and economic development for a particular assigned area. The Planning Commission should assign a block or group of villages or mohallas for local development works on a long term basis. The present ad hoc pattern of NSS should be replaced by a continuous programme of local area development where students and teachers can participate year-round.

(16) Every university's freedom to frame its own diversified curricula within the broad framework of the goal of our Constitution should be fully respected. Each university should be fully supported in preparing multiple curricular models to raise the quality of higher education and help it to liberate itself from stagnation and obsolence.

(17) Inculcation of moral and spiritual values at all levels of education should be integral to all learning processes.

(18) Two years of +2 stage has proved too viable and has proved to be more susceptible to college admission rather than moving towards world of work. It is time to consider integration of high school and higher secondary stages together so that there is a continuous 5 years viable stage from 8th to 12th standard available in secondary education. To begin with this should be promoted optionally.

(19) While there may be one open University working in bilingual media of Hindi and English, it will be far more advantageous if every university simultaneously functions in Open University style with multitude of Correspondence Courses and Continuing Education.

(20) An immediate beginning should be made by declaring that all clerical posts will not require any University degree and schooling upto 10th will be enough. The Government may take its own entrance test.

"A legal support by way of extending the Apprentice Act to cover students of colleges by all industrial enterprises including banks, LIC and other financial institutions is necessary. Every industrial enterprise should be required to take a minimum number of students as intern|apprentice and pay stipend to students for their services."

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(21) Similarly it is necessary to delink admission to medical and engineering colleges from requirement of certain marks in public examination of 12th class. Instead there should be a separate entrance examination, the result of which alone will be considered for admission. Thus we can unburden the entire schools system from preparing all students for medical, engineering and similar courses.

(22) Vacation system needs to be abolished for both teachers and students.

(23) While Science and Technology should continue to receive increasing support it should not result in neglect of the Social Sciences and Humanities. Without adequate development of Social Sciences and Humanities there will be a great imbalance in human development.

At any rate what is needed more is the action-plan for immediate implementation. □

Link education with development

Dr. D. M. Nanjundappa

In this paper, Dr. Nanjundappa commends the document "Challenge of Education" but has reservations about views expressed therein on several issues. He is all for integrating education with the total developmental strategy and changing plan priorities in the matter of resources allocation, both financial and human. He describes the proposed delinking of degrees from jobs as an elitist solution and feels it will lead to greater injustice in the matter of equal access to opportunities. He is strongly against vocationalisation of education because of the poor linkages between vocational stream and industry. Views expressed by him on pricing of education, revision of curricula and depoliticisation and management of education merit serious consideration.

IN THE CONTEXT OF THE SEVERE CRITICISM of the present education system like 'it is totally irrelevant to our society', 'Academics and Scientists work in ivory towers', 'the standards are poor', 'it has failed to be a peaceful instrument for social change', 'the absolute number of illiterates has been allowed to increase from 30 crores to 43 crores', 'there is a total lack of linkage between education and development, 'there is lack of academic integrity and proper leadership', 'it is breeding an army of unemployed and several others', the promise of the new Government to bring out a Green Paper on the New Education Policy had raised frenzied expectations. As the Green Paper, 'Challenge of Education : A Policy Perspective', although the cover page colou is somewhat pinkish yellow and will be hereafter re ferred to as the Green Paper (GP)** itself admit that it has found in the country "a new confidence and a new enthusiasm" for reform, it is clear tha the country was looking for almost a radical polic for meeting the various challenges. For the first time perhaps a GP on a very important subject like Educa tion has been brought out for public discussion an debate to crystallise the policy measures on the basi of the public reaction This should be considered welcome feature and deserves appreciation. To wha

Views expressed in this paper are those of the author only. They do not reflect in any way the views of Karnataka Government where he is working as Commissioner and Secretary to Government, Planning and Institutional Finance Departments.

**Connotes a policy paper for discussion.

extent the GP fulfils or belies the expectations is a question which cannot be answered fully in a brief paper of 8 to 10 pages. However, the more important components will be briefly examined.

locating structural defects !

It is true, the GP recognises that in the educational pyramid, the three components, the Primary, Secondary and Higher Education have to develop in unison and that it is only the right type of education provided on an adequate scale that can lead to national development. In the priorities for educational development, it emphasises vocationalisation of the higher education and vocational training In developing the 'new' thrusts, it also focuses on the need to change the orientation, work-ethic, and upgrade the knowledge and skills of the teachers, especially in a future environment which calls for new ideas and new technologies. The GP makes a ruthless indictment of the present education system. All this is an old story.

"If confidence is to be reposed on ideas that emanate from higher education in the existing set up, it is more likely to create greater cleavage between the 'world of knowledge' and 'the world of work'."

It is worthwhile recalling in this context the words of Swami Vivekananda who said 90 years ago : "Promenading the sea-shores with books in your hands repeating undigested stray bits of European brain work, and the whole soul bent on getting a thirty-rupee clerkship, or at best becoming a lawyer—the height of young India's ambition—and every student with a whole brood of hungry children cackling at his heels and asking for bread ! Is there not water enough in the sea to drown you, books, gowns, university diplomas, and all ?"

In fact the GP itself concedes . "as will be seen in the subsequent sections, many of the changes required in education were anticipated by the earlier Committes and Commissions, especially by the Education Commission of 1964-66. Perhaps, problems of today are more the result of tardy and haphazard implementation and a progressive decline in the allocation of resources." Therefore, it appears that the 1964-66 Education Commission and the National Educational Policy of 1968 had captured all the relevant vibrations for a New Education Policy. If it has not been properly implemented, the more basic structural causes have to be looked into rather than merely envisaging that the New Education Policy should articulate the educational imperatives not only in terms of objectives, concepts and priorities, but it should also spell out an operational strategy with the associated financial, material, organisation and human requirements to achieve the objectives of the policy. It is unfortunate that the GP fails to refer to the structural causes.

the elitist trend

The GP does well in seeking the decentralisation of education and in proclaiming that universalisation of elementary education has to be one of the essential ingredients of a national strategy. In this direction, after pointing out the resource constraints and the existing yawning gaps in physical facilities in the primary schools, it suggests integration of *Anganawadies* into the pre-primary and the primary stage of learning. This no doubt may lead to better participation in education to a much greater extent at later stages and also to the increased participation of girls in education; but the introducing of non-formal education from the Class Six stage is bound to be controversial. It is thought of as a measure to stem drop-outs from the formal system. In the absence of more details of the operational strategy, the GP seems to present a retreat from the earlier education policy. In fact, the 1968 education policy had specifically said that the top priority in the next two decades was to provide effective general education of not less than 7 years duration to every child on a free and compulsory basis. Moreover, it is doubtful how effective non-formal education can be at that level in rural areas.

Apart from this, there is the proposal that "higher education has been given a place of special importance because it can provide ideas and men to give shape to the future and also sustain all the other levels of education." This is something which is likely to be debated. Impartial observers hold the view that in the structure of education, distortions have set in—in terms of resource allocation and the policy objectives which have made the education policy far removed from the realities and the needs of the people. If confidence is to be reposed on ideas that emanate from higher education in the existing set up, it is more likely to create greater cleavage between the 'world of knowledge' and 'the world of work'. In fact, one might argue that higher education can improve only when the primary and secondary education improves and that the touch-stone of relevance can be answered fully when education is deeply rooted in the socio-economic milieu of the country.

"The revision of curricula can be attempted so as to relate it to the society and the societal needs only when those who work on it are actually exposed to what goes on in society and how the iterative and the interactive processes are established."

revision of curricula

The GP repeatedly refers to the revision of the

curriculum to suit the new demands of opportunities and technologies which are on the threshold of the 21st century. We have heard about the need to revise the curricula *ad nauseam*. The questions is : Why have we not revised the curricula satisfactorily ? It is surprising that this question is not raised squarely. Only a passing reference to the linkage between education and society has been made. One would have expected that in this area the New Education Policy should have put the strongest possible foundation of the new thrust.

The revision of curricula can be attempted so as to relate it to the society and the societal needs only when those who work on it are actually exposed to what goes on in society and how the iterative and the initerative processes are established. It is well-known fact that all the proposals so far made about the revision of the curricula at different levels have miserably failed due to the fact that the framers of such curricula are themselves ill-equipped, if not ignorant. GP has nothing to offer as to how this hurdle would be overcome.

In its anxiety to have a new thrust, the GP talks of uniformity of syllabus and textbooks at the school level and feels that unless the role of the Centre is enlarged, educational development on proper lines will be retarded. Obviously, it is exercised over the concurrent list in which education figures. The easy solution, therefore, is to expand the Centre's role through the setting up of a network of 'trend setters' in the districts. The model it has in view is the network of Central Schools coming under the Kendriya Vidyalaya system.

slighting of universities !

It is not clear whether the avowed objective of countering language parochialism can be achieved by

"Delinking of degree from the job is a tempting alternative for those who want an elitist solution. Having failed to maintain discipline and standards of admission to the universities, a desperate short-cut is now suggested."

expanding the network of schools run by the Central Government. In fact experience has shown that the Central schools are meant predominantly for the children of the All-India migratory bureaucracy and also for those who have already developed a snobbishness that admission to such a school would promote a more elitist structure.

The country does not seem to draw lessons from the approach of setting up of 'trend setters' like IITs and National Laboratories. The consequence has been that the universities and the colleges were permanently relegated to an inferior status and one of the reasons for the large number of universities not being able to make the contribution expected of them is that the country looks only to the 'trend setters' so relegating the other institutions which cater to the people at large.

delinking, the elitist solution !

It is no doubt recognised that the problems the country is facing in the area of education and of the educated unemployed has no easy solution. This is the

"It is a foregone conclusion that the delinking of degree from the job will lead to greater injustice in the matter of equal access to opportunities to serve. Instead of more degree holders being unemployed, there will be more non-degree holders being unemployed."

outcome of a growth-oriented strategy which has not brought with it the structural changes in the economy with a more equal distribution of income and assets. The GP has utterly failed to grapple with the fundamentals of this issue in so far as a suggestion is made that delinking of degrees from the jobs would reduce the pressures on universities and institutions of higher learning. It is again unfortunate that the capitation fee controversy is only noted but judgements about it are withheld. Can this be construed as another instance of the 'triumph for the penny capitalism', a phrase used by a World Bank spokesman ?

Delinking of degree from the job is a tempting alternative for those who want an elitist solution. Having failed to maintain discipline and standards of admission to the universities, a desperate short-cut is now suggested. As is well known, even when there are objective evidences of competence like the distinctions achieved in the degrees, there is considerable politicisation which is directly responsible for the erosion of the values in the educational system. Under the new proposal, the scope for politicisation and 'privatisation will be almost unbridled and will have a happy hunting ground. It is a foregone conclusion that the delinking of degree from the job will lead to greater injustice, in the matter of equal access to opportunities to serve. Instead of more degree holders being unemployed, there will be more non-degree holders being unemployed. Those who are still charmed by the degree status in society cannot be deterred from going to the universities. It is, therefore, suggested that a more sensible way to check the pressure on higher education is to declare that admission to higher education shall be open to only those who get the A-grade and those with less than the A-grade will have to branch off to vocationalisation. There are instances to show that persons with infallible integrity giving academic leadership at such levels can easily bring about these charges. May be the question is; Are there many such academic leaders ?

pricing of education essential !

One of the major issues to be tackled by the new Educational Policy is that of developing appropriate mechanisms to regulate admissions and to ensure that the educational institutions are properly equipped. The physical deficiencies like the preposterous shortage of black boards, lack of drinking water in the school premises, shortage of school rooms, etc. in the case of primary education should be put an end to assigning the highest priority in the matter of allocation of resources. Except for the school and vocational levels, the issue of the fee structure and the nature of subsidies should receive thorough consideration. The GP again makes only a passing reference to this aspect. It says that the pricing of education at levels other than schools and vocation will have to be reconsidered and the quantum and nature of expertisation has to be related to either merit or the dictates of social justice. This is, to say the least, very disappointing from a much publicised promise of a new thrust. Education, especially higher education, including technical and medical education, confer advantages which get localised in the individuals concerned. The very low fee structure has made the beneficiaries look to Universities and Colleges as 'waiting rooms'. There is no seriousness of purpose in pursuing higher education, because only a negligible fraction of the total cost is recovered as fees In the case of higher education and professional technical education, the pricing mechanism should be used to give investment signals to those who want to proceed to higher education. The full cost charging would make them think whether it is worthwhile for them to pursue this line. For those who are merited and who belong to weaker sections of society, adequate scholarships can be given so that there is no social injustice Moreover, the present system of financing education at these levels by grants can be replaced by a system of loans. This involves no extra financial expenditure It only calls for a change in the procedure of financing The amount which is now passed on to the institutions or Universities as grant will flow to them as full cost-fees through a loan given to each student who is eligible for higher education. The loan will be equal to the full cost of education, which is now met by the Government as a subsidy through the grant This is given without linking the student to his parentage or the parents' income. It can give a sense of dignity to the student and also make him realise that he must make a good use of this amount since it has to be repaid later on when he begins to earn. Why the GP has fought shy of an innovative method of financing higher education when it talks of new ideas, is not very clear.

"It is, therefore, suggested that a more sensible way to check the pressure on higher education is to declare that admission to higher education shall be open to only those who get the A-grade and those with less than the A-grade will have to branch off to vocationalisation."

code of conduct for teachers !

If education has failed to work as an instrument of social change, there are serveral causes. But the most important of them is the effort of the vested interests in preserving the status quo and in making an easy buck in the academic world. The total erosion of values in the field of education has caused the greatest damage to society. Without any compunction, the teachers and educational administrators give up the high ideals lured by the monetary wind-falls to grow rich in the sleep as it were. It is, therefore, obvious that there is need for a Code of Conduct being evolved by the Teachers Organisations. The GP refers to this again in a passing way whereas this is the main lever in the education system. It goes on to add: "Natonal Commissions on teachers have recommended that if these organisations are unable to come out with a Code, this task should be performed by the Government". The problem, however, is not confined to those in the educational sector only. Nor is it so simple to implement. This highlights the immensity of the task in an area which is basic to the very transformation of the society.

The new educational policy fails to recognise that acceptance of a Code of Conduct or work-ethics cannot be expected from the educational sector alone, either in examinations or teaching and research responsibilities or in managerial responsibilities, when there is a total breakdown of the moral fabric in the society as a whole. Politicisation, corruption, utter disregard for higher values of life, in all branches of activity in a growing society have assumed such a gargantuan proportion that rhetoric can produce no impact whatsoever. If at all the education system is to respond, the moral fabric of the society as such should first improve.

"The very low fee structure has made the beneficiaries look to Universities and Colleges as 'waiting rooms'. There is no seriousness of purpose in pursuing higher education, because only a negligible fraction of the total cost is recovered as fees."

vocationalisation, not feasible !

Much faith is reposed in the vocational systems and the previous education policy statement has also had its share. Vocationalisation which should provide precisely those skills has not grown appreciably for

many reasons ranging from the cultural prejudice of looking down at people working with the hands to the poor linkages between the vocational stream and industry. The GP has rightly suggested that the vocational courses should be aligned with agriculture, the service sector and the various programmes of rural development. It has, however, failed to note the importance of certain policy measures which are absolutely essential, if vocational system is to succeed.

As it stands now, industry which depends for its skilled manpower on the public sector institutions does not even respond to the request to inform what kind of skills are required and what their demand would be so that vocational planning can meet this challenge effectively. Secondly, the vocational institutions are manned by those who have not risen in a particular vocation by their inservice training and experience. Most of them are selected on the basis of the degrees they possess To crown it all, the overseeing of the vocational system is done mostly by the generalist administrators who have no idea of what vocationalisation is. It is, therefore, strongly suggested that this system should be thrown away lock stock and barrel Industry should be compelled, if necessary by legislation, to inform about the needs of different skills and the number of such skilled persons needed Also industries should participate directly in the training programmes. Successful leaders in industry or the competent workers should come and train the new entrants who are admitted to the vocational institutions. The total planning and executive responsibility should rest with a person who has been successful in the line not by his degree, but by his work and actual experience of rising to the top of the vocational ladder The stranglehold of bureaucracy in this area must be broken if the objectives of vocational system are to be achieved.

"Without any compunction, the teachers and educational administrators give up the high ideals lured by the monetary wind-falls to grow rich in the sleep as it were. It is, therefore, obvious that there is need for a Code of Coduct being evolved by the Teachers Organisations."

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managing education, a challenge !

The GP has rightly emphasised the importance of the management system for education. Boards of secondary education and Universities are groaning under the weight of work associated with affiliated colleges On the other hand, many of the affiliated colleges are experiencing difficulties because, irrespective of their excellence, their activities and academic programmes are dislocated by the events in other institutions. The GP advocates as a solution the giving of autonomy to institutions of quality. If the affiliated colleges ar separated from the universities through some othe organisational mechanism, one can expect the decen tralisation process to lead to improvements in educa tion.

Such a suggestion has certain merits, but the rea lities of the situation cannot be ignored The systen of affiliation which is prevalent in the country ha been there more by design than by choice Ideall speaking, residential universities with no responsibili ties for colleges would be the best, but this is beyon the resources which are available for education. Th system of affiliation is criticised as a patron-clien between the universities and the colleges and no stric ter control can be exercised by the universities It i stated in the GP that no affiliated college has bee brought to order by a university

If we look for the reasons closely, we discover tha it is more due to the lack of frequent dialogue betweer the Vice-Chancellor of a University and the principal of the affiliated colleges and the staff working in them The only occasion for exchange of views, that too i a very limited way, is at the academic council or th senate meetings Even here, not all colleges are repre sented. But nothing has prevented the Vice-Chancello from holding frequent meetings with the principals c all affiliated colleges and give academic guidance t them This has been done in some universitie, wit outstanding success Such a frequent dialogue has als been instrumental in restoring order and discipline i the affiliated colleges.

cadre of administors, a need

In this context, the major issue is that of academ leadership from competent educational administrator It is heartening to note that the GP says that it necessary to "develop an appropriate pedagogy for th training of educational administrators". Such a cadr must be drawn from persons with strong intellectu and moral fibre. No new policy in itself can bring abou depoliticisation of education or satisfactory academ leadership The simple reason is there are not adequa number of persons of the right type and of high mor integrity to manage the most onerous responsibility the education system. If there are educational admini trators who can stand on their own without alignir themselves with one group or the other, if they ca anticipate the students' genuine needs and act quick to meet them, if they can show infallible integrity a if they can possess inexhaustible energy to look in all details in the functioning of the education syste to ensure fairness, equity and relevance. the battle reform of the Indian Education System could be ha won. Developing an appropriate cadre of educatior administrators cannot materialise unless specific poli measures are taken in this direction. One suggesti could be to revive the Indian Educational Service.

depoliticise education

The very educational system which is being subjected to sweeping indictment has produced the best scholars, scientists and technologists, comparable with others in any part of the world. But they form only a small minority. This may, however, be looked upon as a system which still possesses the potential to throw up excellence in diversity But this is marred by the large scale politicisation and the complete absence of work ethics. Barring a few exceptions, integrity in all fields—academic, administration, industry, and what not—is at the lowest ebb The outcome cannot be anything other than chaotic and opportunistic developments favouring the vested interests and the elitists. This is further fed by the growing illiteracy. Adult education has not been pursued with the seriousness which it deserves. It is somewhat difficult to believe what the GP says, viz., financial constraints explain its failures. It should be pointed out that even where there is money, these programmes have not been given the due priority and importance in their implementation. Efforts are lacking to utilise programmes like NREP, DPAP, RLEGP and the like, for organising functional literacy classes systematically The only explanation that can be offered is that there is 'no mind' to abolish illiteracy.

"Ideally speaking, residential universities with no responsibilities for colleges would be the best, but this is beyond the resources which are available for education."

The 'bureaucratic culture' and the 'academic culture' have come into conflict and there seems to be no simple way of resolving it. Academicians have to go to farms and factories and to societies, to learn the felt needs and the process of development There should be continuous interaction between the academicians and the developers and development policy makers. Having gained a first hand knowledge, they can start restructuring the courses This is not to imply that only academicians are to learn the dynamics of society. The development policy makers should also learn to become sensitised by their interaction with academics, and gain insights for improved educational planning, monitoring and evaluation. In its absence, meeting the challenges of education can only remain a slogan.

We cannot expect the GP to spell out the full details of any policy proposal. However, treading the path of a more pragmatic goal, it seems necessary that some of the contours of linking education with development should have been indicated. The GP seems to have fought shy of suggesting any hard strategies. They should not be discounted merely because of their harshness. For example, for ensuring a proper revision of the curricula at all levels, a radical measure like closing the institutions for, say, one year and making the students and teachers go to the field and farms to study the realities of life and then come back for their studies and teaching functions need not be ruled out, merely because it is either harsh or involves administrative problems As the GP itself notes in the closing paragraphs "A total atmosphere for development, hard work and excellence can be built up only through a programme which involves everybody as a promoter as well as a recipient of new attitudes and ideas".

link education with development

Finally, no educational policy, however well framed, can succeed unless it is integrated with the total developmental strategy of the country. The question of improving the remuneration of the primary school teachers cannot be solved unless there is a national incomes and wages policy The desperate situation that obtains in the area of primary and adult education cannot be tackled effectively by any stretch of the imagination, unless there is a determination to change the plan priorities in the matter of resources allocation, both financial and human. The proposal to establish a Joint Commission of the Centre and the States to explore sources of funds for education may not yield worthwhile results. After all, resource mobilisation cannot become a compartmentalised affair under planning It is true that local initiative and community contribution should be tapped For this purpose decentralised planning and decentralisation of power through the setting up of democratic institutions like the Zilla Parishads, Panchayat Unions and Mandal Panchayats would provide some frame for local involvement But this is not taking place in all the States In resources allocation, human resources development, particularly at the lower end of the income scale, must get a higher priority. What is first required for school education and vocational education and adult education must be provided fully and this should not be an impossible task judged in the context of the total resources of the country.

"Also industries should participate directly in the training programmes Successful leaders in industry or the competent workers should come and train the new entrants who are admitted to the vocational institutions. The total planning and executive responsibility should rest with a person who has been successful in the line not by his degree, but by his work and actual experience"

Stir masses against illiteracy!

Prof. Iqbal Narain

Enlisting reasons for illiteracy of an alarming proportion in the country, the author feels what we need today is a people's movement to fight off this debilitating menace with a committed leadership to give it a direction. "We require another Gandhi for the second phase of the liberation movement. Here is both an opportunity and challenge for leadership, political parties and people. Will they rise to the occasion ?" he asks hopefully.

NDIA HAS GAINED ENOUGH SELF-CONFIDENCE as a nation to undertake on its own exercises of critical self-introspection and creative heart-searching The effort is basically directed towards re-inforcing her attempts at nation-building through self-correction born of self-criticism. This may even amount to modifying, or even giving up earlier thought processes, policy frame and modes of action. Nothing would illustrate it more than the latest document of the Ministry of Human Resource Development (Department of Education), New Delhi, entitled Challenge of Education · a Policy Perspective (1985)" (hereinafter referred to as 'the document') It is almost a confessional statement—an official critique—of governments' efforts; limited achievements and, above all, failures in the field of education from bottom upwards. More importantly, since the challenge of education still persists, it is an opportunity by invitation of no less a person than our young, dynamic and open-minded Prime Minister himself to start a national debate on the subject so that the new educational policy becomes a peoples' policy in terms of ideas and action. The dialogue is on and the present paper with all its limitations is a small contribution in the same chain.

this illiteracy galore !

It is common knowledge that efforts so far at the twin and organically linked fronts of literacy and adult education have met with far less success than what was even anticipated let alone what was desirable. This is no denying the fact that there has been in the country a massive expansion of education since Independence. Despite this, the literacy rate has just gone up from 16.67 per cent in 1950-51 to 36.23 in 1982-83. Thus more than half of the males and two-third of the females have remained illiterate. The situation is much worse in rural India where the literacy rate

is 29.65 per cent in contrast to the urban literacy rate of 57.40 per cent, though it is here that 76.69 per cent of total population lives. The females are weaker still in terms of literacy, particularly in the less developed states of Andhra Pradesh, Bihar, Madhya Pradesh, Rajasthan, Orissa and Uttar Pradesh where literacy rate is about 20 per cent, though taken together these States constitute 52.77 per cent of the total population in the country One could even digress a little and canvass for the hypothesis that larger the population, the less is the rate of literacy, and still less, of female literacy This, in turn, would make one to underline the need of population education on a massive scale in formal, non-formal and informal sectors of educa-

"The backlog of illiteracy in general and of adult illiteracy in particular as a left-over legacy of the colonial rule has been tremendous It was, therefore, unrealistic for any government to hope to cover the gap even with regard to illiterate children within a period of ten years"

tion—more in the latter two categories in the specific context of rural India and that also in the less developed States The scenario of disappointment persists as one moves to literacy rates among Scheduled Castes (21 38 per cent) and Scheduled Tribes (16 35 per cent) The overall picture becomes bleaker still when one recalls the rate of drop-outs--"of 100 enrolments in class 1 only 23 children reach class VIII" (para 3 9 of the document) The over-all conclusion is that the ruling elite have failed to fulfil the promise as envisaged in article 45 of the Directive Principles of State Policy in our Constitution, which had envisaged

> The state shall endeavour to provide within a period of ten years from the commencement of this Constitution for free and compulsory education for all children until they complete the age of fourteen years.

of adults and children !

Similarly, in spite of steady increase in the literacy of adult population since Independence, there is the threatening prospect of increase of adult illiterates in terms of absolute numbers If in 1951 there were 173.57 million adult illiterates, the number went up to 245 millions in 1981 According to the World Bank estimates as referred to in the document, the number should increase to 500 million in A D 2000 India will thus come to have world's 54 8 per cent illiterates in the age group of 15 to 19 years

It will not be out of place to recall here that there is a positive correlation between the illiteracy of the adults and children in the country. As J P Naik argued :

> A literate parent is the best guarantee to ensure that his children will be sent to school and retained there and adequate attention will be paid to see that they benefit appropriately from school enrolment and attendance-the illiteracy of the parents becomes the greatest obstacle to the enrolment and retention of children in the school system. It is also the largest single cause of their early drop out of ineffective learning.

and five drawbacks !

One could go on and on churning statistics. But this is not necessary because the point stands indisputably proved. The really meaningful exercise would be to enquire into the reasons that account for the dismal picture on these scores. This is what we propose to do in terms of basic parameters of the malady

One : The backlog of illiteracy in general and of adult illiteracy in particular as a left-over legacy of the colonial rule has been tremendous. It was, therefore, unrealistic for any government to hope to cover the gap even with regard to illiterate children within a period of ten years, all the more because it was not the only challenge that the government of the day had to face. Of course, adult literacy was almost a new additional item on the agenda, though, as stated earlier, of basic importance in the context of literacy of children *per se*

Two The continuous increase in population made the issue of illiteracy all the more complex For example, the total population which was 54.82 crores

"The psychology of dependence on government for every social welfare activity, including education and literacy, persisted. Looked at from a broader perspective, the psychology of dependence could be traced to the failure on the part of successive governments in India to involve the people in the nation-building process, as Mahatma Gandhi had done in the cause of India's struggle for freedom."

in the 1971 census (out of which 43 91 crores was rural and 10 91 crores urban) shot up to 68 52 crores in 1981 census (out of which, again, 52.55 crores was rural and 15 97 crores urban). It should therefore not be surprising if increase in population further tended to neutralise the gains on the front of literacy.

Three : Though the country became politically free, the psychology of dependence on government for every social welfare activity, including education and literacy, persisted. Looked at from a broader perspective, the psychology of dependence could be

traced to the failure on the part of successive governments in India to involve the people in the nation-building process, as Mahatma Gandhi had done in the cause of India's struggle for freedom. The net result was that the call for people's participation, wherever given, did not evoke the required response, though establishment of primary schools and health care centres did figure in the priority list even of people in rural India.

Four : The effort that the government made had to be spread too thin because of the gigantic nature of the challenge itself. It should, therefore, not be surprising if the attempts, lacked even minimal infrastructural inputs, let alone quality. The result has been that public and private schools continued to flourish for the children of the few, including those of the political elite, who could afford educating their wards there. This further widened the gulf between the rich and the poor, though the country continued to swear by the socialistic pattern of society. It is in this context that the promise of the present Prime Minister to open model schools and add to the number of the central schools gains significance.

Five Whatever the government could do, was not tailored to the needs of the people, particularly in rural India The challenge in rural India had been how to make adults and children learn without affecting the process of their meagre wage earning This needed an effort to arouse the consciousness of the rural people in favour of literacy on the one hand and a real effort to adjust the school system to cater to the needs in terms of time for school going and functional efficacy on the other The situation had remained far from satisfactory on both counts Precious little had been done to bring home to the villagers the need of literacy, let alone primary education for their children, particularly girls Again, adults (and for that purpose even children) would need different hours of teaching when they are not busy in working for their bread Further, teachers, particularly those working in single teacher schools, will also be asked to take classes for adults at night They would naturally have hardly any motivation to do so, Such examples can be multiplied

"The effort that the government made had to be spread too thin because of the gigantic nature of the challenge itself It should, therefore, not be surprising if the attempts lacked even minimal infrastructural inputs, let alone quality. The result has been that public and private schools continued to flourish for the children of the few."

what's the way out !

What then is the way out ? It is easier here, as elsewhere, to attempt a diagnosis of the problem than to suggest remedies. Still some suggestions are being made here for whatever they are worth.

Conceptually speaking, the liberation movement in every country, particularly of the third world (and India is no exception) has two phases—the pre-liberation phase and the post-independence phase with the people (both as subjects and objects) serving as the proverbial buckle that fastens or the hyphen that joins the one with the other. The key focus of the pre-liberation phase was independence, while that of post-independence era it is nation-building which naturally involves a struggle against hunger, ill-health, poverty, illiteracy and the like. The elite, particularly the political ones, guide and mobilise the people in terms of a movement, in support, and two foci, who, in turn, provide strength to their pursuit. (It is noteworthy that the role of the elite and the people are not necessarily dichotomous to each other in the two phases of the liberation movement; they could also complement each other).

"Whatever the government could do, was not tailored to the needs of the people, particularly in rural India. The challenge in rural India had been how to make adults and children learn without affecting the process of their meagre wage earning "

To Gandhi mainly goes the credit of mobilising the people and thereby converting a somewhat narrowly confined elitist movement into a mass upsurge in support of the goal of independence and that also largely under the Congress umbrella, though the trend in this direction were feebly visible earlier also (One could cite the example of Tilak's Swadeshi movement as also of his drifting away from Gokhale's path of petition and prayer to that of protest with mass support).

make it a mass movement

However, the same process could not continue in the second phase. The result was that the challenge of nation building was largely left to the government with people assuming the role of distant critics rather than of active participants. There was no Gandhi to mobilise their support for the second phase of the liberation movement. The Congress was now busy in converting itself from a movemnt into a political party and the national platform of the pre-independence days was getting split into several political parties all busy in the struggle for power to form the government or to get a berth in it The history of the post-independence period thus far is enough to convince us that the task of nation-building cannot be left to government auspices alone. This is true of illiteracy and adult education in specific terms We need another country-wide people's movement to

lend support and strength to the cause of nation-building in general and to meet the challenges of illiteracy and adult education in particular. There is, again, a need of national platform for the purpose where all strata of society, high and low, rich and poor, retired and in active service, join hands on a war footing, irrespective of caste, religion, region and class to grapple with the challenge of education in general and of illiteracy and adult education in particular. Altogether, there is need of a national movement to handle the task with a committed leadership to guide it and give it a direction, and

"The history of the post-independence period thus far is enough to convince us that the task of nation-building cannot be left to government auspices alone. This is true of illiteracy and adult education in specific terms. We need another country-wide people's movement to meet the challenges of illiteracy and adult education in particular."

involve people to become its backbone, and a party or parties to lead and mobilise the masses in its support. Thus a people's movement for literacy and adult education is the need of the hour. We require another Gandhi for the second phase of the liberation movement. Here is both an opportunity and challenge for leadership, political parties and the people. Will they rise to the occasion?

Even at the risk of digression, it may be worthwhile to argue that in the countries of the third world, we need political parties with a difference--that is, political parties-cum-movement rather than national movement-turned political parties, which Congress and even other political parties are tending to become after independence.

work with a missonary zeal

Finally, a differentiated view is necessary of people's movement arousing consciousness in regard to and supporting the cause of literacy and adult education on the one hand and of the agents of the desired change on the other Of course, political will and its expression into governmental action and financial support would continue to be the backbone of the programme. In addition, students, teachers as also other professionals and government servants (both retired and in active service), members of voluntary organisations, and in fact, all citizens who are capable and willing to extend a helping hand should be involved. The capability can even be generated through a programme of training if it is not there For this it is necessary that one clearly envisages what the instructors are expected to do. One may recall in this context that the draft final report of the Sixth UNESCO Regional Workshop (in which 10 countries of Asia and the Pacific region participated) visualized the role of the instructors as follows :

(i) to create a favourable environment for initiating the adult education programme;

(ii) to organise adult education centres;

(iii) to impart literacy and numeracy skills;

(iv) to enable the learners to acquire problem solving skills, and

(v) to maintain records and evaluate the learners to help neo-literates to continue their learning

(Indian Express, November 6, 1985)

This is just an example. For prospectus of roles and the training required for their inculcation can be broadened further to suit the requirements of literacy and adult education in India in the light of actual experience brought out by the various studies on the subject It cannot be denied, however, that clarity about objectives of the programme, role of the instructors in the light of the objectives and the need of training to suit the envisaged roles will be necessary if the programme is to succeed

Even at the risk of digression it will not be out of place to mention that a conscious effort is necessary to develop an interface between educational institutions and society if the challenges of nation-building are to be squarely met Speaking specifically in the context of the twin problem of literacy and adult education, it will not be out of place to mention that if educational institutions were to adopt villages|towns|cities to tackle the problem on a continuous basis with a missionary zeal, the governmental effort could be greatly supplemented In fact, there is no substitute for teachers and students as resource for nation-

"Of course, political will and its expression into governmental action and financial support would continue to be the backbone of the programme. In addition students, teachers as also other professionals and government servants, members of voluntary organisations, and in fact, all citizens who are capable and willing to extend a helping hand should be involved."

building in general and for handling the issues of literacy and adult education in particular. It is, therefore, suggested that they should be involved in the effort to the maximum possible extent Since our educational system is examination-oriented, nothing would be lost if students are given some credits in their examination for their work in the fields of literacy and adult education after it has been rigorously tested that they have successfully delivered the goods.

What is equally important is that all efforts are made to avoid overlapping and duplication. It has been a common experience, particularly in rural India, that when the villagers are confronted with a situation when they find that various agencies are trying to do similar work, they get baffled and in the process the programme itself tends to be diffused or overdone in some sectors and underdone in others on account of replication

for a lasting impact

What is still more significant is that attempts do not remain symbolic but they leave behind an imprint of honesty and sincerity, and above all, a lasting impact.

"Speaking specifically in the context of the twin problem of literacy and adult education, it will not be out of place to mention that if educational institutions were to adopt villages/towns/cities to tackle the problem on a continuous basis with a missionary zeal, the government effort could be greatly supplemented."

It is here that realistic planning, requisite resource allocation, both human and material, recourse to non-governmental sources for help, use of decentralised panchayati raj, cooperative and voluntary institutions and, most important of all, continuous monitoring, preferably by constructive but independent agencies, will be necessary.

If all this happens, the twin challenges of literacy and adult education which appear to be eluding us all the time may be met by the turn of the century by peoples' cooperation and goodwill and an all out national but depoliticised effort. (As far as the twin challenge of literacy and adult education is concerned, there should be a consensus among the various political parties and pressure groups about the need and urgency to meet it They should, in fact, sink all their differences and join hands to grapple with the challenge in the larger national interest. This naturally presupposes that there are causes and occasions when it is expected of the political elite and political parties to rise above their own respective interests and ideological differences and extend help and cooperation in the larger context of nation-building. Nothing perhaps illustrates this more than the issues of literacy and adult education in today's context. □

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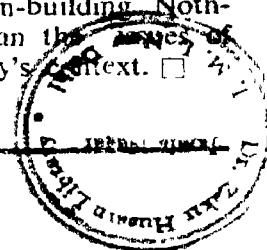
(*Continued from page* 40)

thought and action and programmes concerning the quality of education, even when these were well conceived and generally agreed to, could not be implemented satisfactorily. It is this aspect of the problem that should be our major concern —The report of a Commission is not a substitute for action. Its purpose is to generate action A report which is shelved or does not lead to action is worse than no report because it leads to frustration by arousing hopes that remain unfulfilled. Time is the essence of the problem "

the will to act, a challenge !

It seems that once a policy-frame is defined in some tentative way, and a corresponding plan of action is drawn up, indicating what changes within education and what changes in the related ministries, departments employment patterns, etc. are concommitant, a thorough, high-level discussion with the related groups would still have to be made Then alone the policy and the implementation scheme could be considered as having a consensus behind them All ministries and departments, public and private industry will then be committed to the new education The question of Centre and State relations is bound to arise again and again, but most participants in the ongoing discussions are convinced that if truly economically effective pattern of education is drawn up, all will stand to gain, and it will be treated with the same singleness of purpose as matters of national security and defence It is to be hoped that the Prime Minister's great concern with education and the Minister of Human Resource Development's fairly clear ideas in this field will result in the steering of the whole process in such a way, that we give ourselves the education we have been promising for the last forty years. This itself is a challenge to the capacity of a democratic system—to work out and act on a plan of change of such a dimension. □

Draft graduates for adult literacy

Prof. Upendra Baxi

Prof. Baxi says "illiteracy is a drag on development towards 21st century" and suggests compulsory drafting of all graduates in the country for the adult literacy programme if literacy is considered essential for our 'development and survival' as envisaged in the document "Challenge of education a policy perspective". He is of the view that the document acknowledges all criticism against the present education system as valid; it is only a recodification of the problems and platitudes. It is also indifferent to certain objectives enshrined in the Constitution which adheres to the socialistic pattern.

THE NEW EDUCATION POLICY (NEP)—or shall we now have to call it the New Human Resource Development Policy—is a remarkable statement. Reading it, one is reminded of the cockpit announcement, at the time of landing "Cabin Crew, please disarm all doors" This is what the document does; it disarms critics of all educational policies by acknowledging, in refreshingly reiterative candour, all criticisms as valid So, the NEP document lands us safely; and there is no greater safety than being in the middle of nowhere!

title of document misleading!

The NEP document is aptly entitled 'Challenge of Education"; it is the sub-title ("A Policy Perspective") which creates misleading expectations. This is not a perspective, unless of course recognizing the challenge itself may be regarded as a "policy perspective".

Take, for example, the analysis of adult education and functional literacy After acknowledging that in A.D. 2000 there would be 500 million illiterates in India, and that such magnitude of illiteracy is a drag on development towards 21st Century the NEP document says that we should decide "once and for all" after "careful consideration" whether the perception that "removal of illiteracy is an essential precondition for the meaningful participation of the masses in the process of political decision making and national reconstruction" would be "valid for India"! In other words, the authors of the Report aren't sure! Some 'policy perspective', this!

Later on, towards conclusion, the NEP is more emphatic Literacy is "a pre-requisite for development and survival it is a truism that the nation would not move towards the 21st century on two legs unless illiteracy is banished and a universal learning environment is created" (This makes it possible to think that the Nation can move to the next century on one leg or even with crutches! If this is so, why the tentativeness earlier on in the NEP formulation?

illiteracy removal, a compulsion

What's to be done? The authors of NEP haven't obviously read Lenin monograph by this title. Therefore, they rest content with infantile observation such as—

> "Voluntary organizations seem to have an important role in the movement, but how this role can be realized is a moot question".

So, what shall the Nation debate? A moot question If the "real problem is as to who can be catalysts for Adult "Education", it is no answer by way of policy perspective to say that it is a "moot question"! Some answers howsoever controversial, should have been provided For example, every literate adult in India

could be conscripted for imparting adult literacy. No student should get a degree certificate without a prescribed participation in literacy programmes. Since the universities have the power to revoke degrees, all graduates of Indian universities since Independence, barring those who are aged or disabled, should be prescribed participation in adult literacy programmes; failure to do so could result in revocation of degrees. If literacy is essential for the nation's "development and survival", surely this isn't much to ask from educated Indians! If adult Indians can be conscripted in times of war to protect national integrity, can they not be drafted in a war against illiteracy?

politicisation, a constraint

Let us take another example. The NEP acknowledges the problems of academic corruption and politicization. It bemoans that considerable number of teachers make large sums of money by coaching classes, neglecting teaching schedule in the school hours It refers to examination scandals which erupt from time to time But it says it is "difficult" to check these malpractices.

Why? Because of politicization And politicization also poses serious internal constraint to reform in education Depoliticization would mean, according to the authors of the document, that "many political parties will lose their cadres, not knowing where to run for their manpower required for contesting elections, participating in demonstrations, protest marches and processions" Also, depoliticization would "mar the careers of people with doubtful credentials as researchers and teachers".

How is this constraint to be removed? The NEP recommends that there should be freedom of intellectual debate on politics on campuses but the "administrative system of the University should not be used or subverted for the ends of any political party". But the Report does not recommend how the administrative system (whether school boards or Vice-Chancellors) should be so appointed as to be above party politics, how the system of administering grants-in-aid or development grants should be also depoliticized.

Since this is not done, the Report assumes a frightening anti-democratic dimension. The exercise of the fundamental rights of freedom of speech, expression, conscience, assembly, association are perceived as inimical to intellectual excellence. Institutional politics is seen only in negative terms; what may be good for society at large is not good for educational institutions. The hidden logic of the NEP is "Down with Democracy" in education A policy or a police perspective, this?

unbiased appointments, crucial

Surely, using university administration for political ends—and therefore in the process creating the image that knowledge grows out of power--is wrong and costly. What is needed is not curbing of democratic rights of students and teachers; what is needed is that appointment of key officials in the system—whether Vice-Chancellors, school board members, UGC Chairman and members, and in NCERT—should be made only on considerations of academic standing and personal integrity. Also, the discretionary element in sanction or disbursement of grant-in-aid or development grants, which creates political dependencies, should be diminished.

let Constitution be the guide!

The authors of the NEP only know that the Constitution of India contains powers to legislate on education in concurrent list and that there is a directive principle of state policy regarding universalization of elementary education. They do not cognize the values of equality, fraternity, liberty and justice in

"If literacy is essential for the nation's "development and survival", surely this isn't much to ask from educated Indians! If adult Indians can be conscripted in times of war to protect national integrity, can they not be drafted in a war against illiteracy?"

their formulation of "excellence", "access", "quality" or "management" of education. They do not take the fundamental duties of citizens of India—which now define what we should all mean by politics—as the basis of their notions concerning discipline and accountability in education system. They do not know that our Constitution is socialistic--at least since 1976 amendment to the Preamble. Nor do they give thought to the article 30—protection to cultural minorities to establish and administer educational institutions of their choice; or to the problematic of making meaningful and effective the policies and programmes of educational reservation for the depressed classes; nor the provision, in the Directive Principles, requiring special solicitude for the "weaker sections of the society".

It is pointless to go on. The Nation was promised a "policy"; it has got only a recodification of problems and platitudes. The NEP document is smug and sloppy. It is also dangerous because of its cavalier treatment of mass literacy and inherently anti-democratic stance on "politicization". It is also dangerous because it is Constitution-blind. Let us hope that the national debate which follows provides a framework of policy which the NEP document was supposed to provide.

Teachers should be dedicated

Dr. Amrik Singh

The author is of the view that for the success of the education policy teacher must be a person with right attitude in terms of love of the profession, interest in the taughts, desire to mould and ability to organise. Teaching for him should not be a mere profession. His interest in the particular discipline that he has opted for is most important. The author feels that it is appropriate to associate educationists with policy making and to dilute what he calls the poisonous influence of government culture, i.e., policy formulation by bureaucrats.

IF IT IS ASSUMED THAT as a result of the efforts now underway the right kind of new educational policy will get formulated, the question will still remain how it is to be implemented. One bottleneck can be lack of funds. If for the sake of argument funds of the requisite order were to be available, are we certain that it would be possible to put into effect whatever is agreed upon ?

motivated teachers, prime need

In my judgement a very crucial bottleneck is going to be the availability of men and women with the right attitudes. In the course of my working career spread over almost four decades, I have come across hundreds of people. Out of the whole lot of them there were not more than 15 or 20 per cent whom I would describe as having the right attitudes. The rest had no business to be in teaching but they were there and there was nothing that one could do about it. Put a little bluntly, one could say that regardless of what anyone thought in the matter, day after day, they carried out the daily ritual of teaching in the classroom and played havoc with the future of the tender lives put at their mercy.

The question which arises is what is meant by the right attitudes. As far as teaching is concerned, I would list them as follows :

(a) love of the profession,

(b) interest in other human beings,

(c) the desire to mould human beings in the image that one has evolved as a result of study, reflection and experience; and

(d) the ability to organise work in such a manner so as to be able to fulfil these objectives. Broadly speaking, unless a particular teacher has these four qualities, he would not be able to do what is expected of him. In order to elucidate the argument. further, let them be taken up one by one.

teaching, just a profession !

It is not everyone who opts for teaching. Most people get driven into it. They wanted to do something else but for all kinds of reasons that desire could not be fulfilled. Teaching, therefore, is the next available thing and they have no hesitation in taking it up. But they look upon teaching as a career rather than as a vocation. In any case, it should not be overlooked that during the last 3-4 decades, because of the enormous expansion that took place, many more openings were available in this profession than in any other profession.

"A prerequisite for the love of the profession is that they (the teachers) should be interested in the particular discipline that they have opted for. It may be mathematics or it may be geography. But whatever they have opted for should hold their interest."

Having entered the profession, however, some people discover that they like it. But this is not true of everybody. A very large number of them regard it as a job that has got to be done and they could as well have been doing something else. A prerequisite for the love of the profession is that they should be interested in the particular discipline that they have opted for. It may be mathematics or it may be geography. But whatever they have opted for should hold their interest. This also means that they should have the desire to know more than they knew when they joined the profession. This thirst for knowledge is what characterizes a good and sincere teacher as distinguished from another person who has drifted into teaching. It is for every reader to decide for himself how many of the teachers who taught him had this thirst for knowledge and how many of them awakened this thirst in him.

no, it's a humanitarian task !

Closely allied to it is another related phenomenon. A situation can arise and sometimes does arise when a particular individual may be interested in the discipline that he is engaged in teaching. But he may not be equally interested in imparting what he knows to others. The desire to impart knowledge to others and the ability to do so are two different things. Quite often they are found in the same person, though with varying degrees of effectiveness. But there are always a few cases where the desire to impart knowledge may be there but the competence to do so may not be there. These cases may be few but they are not unknown. These are tragic cases if one may put it that way. Wherever such individuals are encountered they should be helped to get out of the profession and to take up something else.

interest in the taught, crucial

For the most part, the competence to communicate knowledge even if it is not inborn can be acquired. Most people do it while on the job, though there is a very strong case for new entrants being enabled to acquire this skill. The crucial thing here is that the thirst for knowledge though an exceedingly important input is not enough by itself. To use the current jargon, it is a necessary but not a sufficient requirement. In order to be effective as a teacher, it is equally important that he who chooses to instruct should be at the same time interested in those whom he instructs. He should be interested in them both as students and as human beings. The two roles are inseparable. If we are interested in imparting knowledge, it is not to robots but to human beings. Human beings have their individual characteristics, their strengths and weaknesses and, above all, their interests and aptitudes.

A good teacher must therefore understand his students as human beings. Failure to do so would only weaken his capacity and competence to instruct. In order to be able to understand them as human beings, two preconditions have to be met however. One, he should be interested in his students as human beings and, two, he must acquire the capability to understand them Some understanding of educational psychology has thus to be a part of the craft of teaching.

"In order to be effective as a teacher, it is equally important that he who chooses to instruct should be at the same time interested in those whom he instructs. He should be interested in them both as students and as human beings. The two are inseparable."

values teachers need profess !

The desire to mould other human beings in a particular image is, to some extent, an extension of the second prerequisite as described above. Interesting other human beings is one of the fundamentals of teaching. In every society there are individuals, mer-

cifully not too many, who feel uneasy in the company of others. Most people however like to be in the company of others and this is as it should be. Whoever undertakes to instruct must have this basic characteristic in his personality make-up. But even when he has this kind of make-up, he has to have a clear idea in his mind as to what it is that he proposes to do. The word idea is rather vague. Perhaps the more appropriate thing to say would be that he should have a set of values which he would like to impart to his students.

Tolerance is a case in point There are people who are short-tempered and are unable to tolerate even minor differences of opinion. In fact, tolerance has to be a basic attribute of one's personality. It means accepting others as they are and conceding to them the right to be as they wish to be. Even if it is assumed that they are in the wrong, it is through persuasion that one tries to bring them round to see one's point of view Tolerance therefore, is not only a personal attribute, it is almost a basic conditioning of every human being There are people who are tolerant and there are others who are intolerant. To a large extent the whole thing may be traced to the manner in which an individual controls his emotions. But tolerance is not a matter of emotion only. There is a good deal of rationality or the absence of it behind the quality of being tolerant or intolerant. One has only to look at children to realise that tolerance is something that one is not born with but is acquired through understanding, patience and a willingness to adjust with others.

tolerance, truthfulness, fairplay

Tolerance is only one example of the attitudes and

"There are persons who have a strong impact on students and there are others who leave them confused and empty. It is the first category who would make good teachers and not the second category. This should be recognised clearly and its policy implications should be given due importance."

attributes that one should have and which get transmitted to others who happen to be one's students. There are scores of other attributes and attitudes which go to make up a human being Even though one allows for diversities of all kinds, there are certain attitudes which every normal human being is expected to have; tolerance is one Truthfulness is another. Fairplay is yet another The desire to help may not be an essential part of one's make-up but it is an important and useful attribute to have. In regard to all these matters everyone who goes into teaching comes to acquire these attitudes. There are persons who have a strong impact on students and there are others who leave them confused and empty. It is the first category who would make good teachers and not the second category. This should be recognised clearly and its policy implications should be given due importance.

These three attributes characterise teachers in their individual capacity. But teachers have also to function in the collective capacity. Sometimes a teacher is required to perform certain duties which, in turn, oblige him to draw the same responses and responsi-

"Not many people with expertise in education are involved with decision making at the Centre. The system of associating educationists with policy making was started by Sir John Sargeant during the days of World War II but gradually it is starting to fall into disuse. It is time that the matter was given a fresh look."

bilities from others. All administrative responsibilities fall under this category. One may be in charge of a department, one may be a Bursar or a Principal or a Dean. One may be a Principal or a Vice-Chancellor. But whatever be the designation and the degree of responsibility, the basic principle is the same. Work has to be organised in such a manner that the qualities referred to above are treated as the guiding principles of one's functioning. A man in charge of finance functions in one way, a man in charge of students functions in another way. But whatever be the mode of functioning, there can be no question of the basic qualities, as referred to earlier, being whittled down or sacrificed.

ability to administer

A large number of individuals have the capacity to function on an individual basis but when it comes to functioning in an administrative capacity, they feel that they are out of their depth. In other words, everybody is not capable of being able to administer. This requires a certain cast of mind and a certain combination of qualities. It is just as good that everybody does not have the same cast of mind, for were it to be so, people would be tangling with one another all the time. That does not happen and most individuals work as individuals. But the quality of their work is, to some extent, determined by the administrative framework in which they are required to operate. The quality of administration therefore is not something that can be treated as unimportant. There are situations in which those who are required to administer make it difficult for others to function. When that happens, it is a sad and indefensible situation and has to be changed sooner or later. But as long as it endures, it causes pain and agony to all concerned

If in the course of my working life I did not en-

counter a particularly large number of people who possessed these qualities, one inference is inescapable. The percentage of such people is not all that large and yet if we have to succeed, it would be necessary to have more and more of such people. To some extent this can be managed but not unless the human material available for teaching is of the kind that it can be improved. To the extent that it can be managed through identification of talent, suitable placing of people, orientation and training and professional experience, it should be managed. If we have to succeed in trying to implement any kind of policy, the availability of such people is a requirement that cannot be dispensed with.

"If everywhere the level of performance is unsatisfactory, how can the teachers be expected to perform differently. Teachers are members of the same social group to which others belong and their approach and attitude are more or less the same as that of other people."

the will to implement policies

All this has been said on the assumption that there is overall agreement in regard to what requires to be done in the field of education and that funds of the requisite order are available. Both of them are questionable assumptions and somebody can turn around and say that to make such assumptions is totally unrealistic. To some extent it is. But the point that I wish to make is that most of those people who talk of the need for formulating new educational policy do not seem to recognise it clearly enough that there are other and perhaps more intractable bottlenecks too. The most important of them is in regard to who will implement this policy.

At the administrative level, these are people vested with the power of making decisions. They consist of Secretaries, Directors of Education, Vice-Chancellors, Principals, those working in the various all-India co-ordinating bodies like the UGC, the Medical Council of India and so on. Without seeking to analyse the role and performance of each one of these people, one thing is clear. Most of them are rule-oriented and not result-oriented. In plain words, what they wish to do is to comply with the rules If, in the process, what requires to be done remains undone, it seldom bothers them. Unless these people acquire a new kind of culture, they would not be able to perform as they ought to perform. Unfortunately, even the various all-India co-ordinating bodies tend to function like government offices and the government culture is so all-pervasive that even these bodies dealing with education have not remained untouched by that kind of culture.

A couple of reforms if introduced can prove helpful. Unlike what is usually believed, most decisions in the government are taken by bureaucrats and not by ministers. Ministers are interested in patronage rather than in policy making. This is the experience of most states. Not many people talk about it because the bureaucrats would like the present state of things to continue and they prefer not to talk about it. As to the ministers, it does them no credit to acknowledge the fact that they are more impotent than irrelevant. It is a matter of some significance therefore that those who handle education are persons who have at least some commitment and some expertise.

What happens at the state level is bad enough; what is happening at the Central level is not in the right key either. Not many people with expertise in education are involved with decision making at the Centre. The system of associating educationists with policy making was started by Sir John Sargeant during the days of World War II but gradually it is starting to fall into disuse. It is time that the matter was given a fresh look. This, however, is a minor part of the problem The more crucial thing is that a resolute attempt would have to be made to dilute the poisonous influence of government culture.

teachers, product of environs

Even when these few marginal things have been done, the key question would be to what extent the teaching profession is able to rise to the challenge. The moment the question is formulated in this manner, those who are articulate on behalf of teachers at once take the position that teachers cannot be different from the rest of the community If everywhere the level of performance is unsatisfactory, how can the teachers be expected to perform differently Teachers are members of the same social group to which others belong and their approach and attitude are more or less the same as that of other people and to expect a different kind of performance from them is to ask for more than what is either possible or feasible. It is some such stance that is usually adopted and maintained

"In one sense it is correct that teachers cannot be different from other members of the society, in another sense the imperatives of their profession demand that they have to be different."

but have to be different !

The matter has been raised on a number of occasions and has been dealt with by a number of people, including this writer. The matter is important enough to bear another look, however. In one sense it is correct that teachers cannot be different from other members of the society, in another sense the imperatives of their profession demand that they have to be different. Almost everyone else works as an individual. What he does or fails to do affects either him or those one or two people with whom he is connected. If he under-performs and the results are disappointing, he cannot blame anyone else and takes the consequences. That is why there is a distinct difference of approach between those working in the private sector and the public sector. Those working in the private sector know that the more effective they are, the better would be the returns. If they cannot perform effectively, there is no alibi for non-performance. In the public sector the outlook is different. Everyone blames everyone else and the result is what we know.

In the case of teaching the situation is different. Teaching cannot be equated with working in the public sector because one is working for those who are present in the classroom everyday. We have to satisfy them rather than those who appointed us. It would be an instance of bureaucratic thinking if one were to feel answerable to the Headmaster or the Principal or the Vice-Chancellor rather than the group of students sitting in front of one. A classroom situation in that sense is qualitatively different from the situation in an office or a factory.

"The response of the students can neither be disguised nor wished away. They may not be vocal about it but their demeanour indicates everything. If a teacher chooses to ignore that signal, it is only because he is shameless about it and has no love of the profession nor any pride in himself"

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performance, daily balance sheet !

What is achieved in the office setting cannot be seen so easily. It is only at the end of the year that the balance sheet is struck and one gets some idea of what is the loss and what is the gain. In the classroom the balance sheet is struck everyday. One knows if one is communicating, and doing so effectively, or one is only pretending to do one's job. If one is pretending, as happens quite often, it is only a determined unwillingness to face facts that one can continue to perform that way. The response of the students can neither be disguised nor wished away. They may not be vocal about it but their demeanour indicates everything. If a teacher chooses to ignore that signal, it is only because he is shameless about it and has no love of the profession nor any pride in himself.

There is also another way of looking at it. Teaching involves other human beings. Human beings think

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"It must be ensured that instead of the classroom being a scene of a daily crime, it becomes a scene of meaningful and creative interaction between the two (teacher and students)."

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and feel. If their thoughts and feelings are not given due consideration, sooner or later either a crisis develops (that is very rare) or a kind of cynicism begins to grow both on the part of the teacher and the taught. While a teacher is free to be cynical as a person if that is the way he has chosen to adopt for himself, it would be an act of sheer injustice to communicate that sense of cynicism to young and eager minds entrusted to one's care. Properly speaking, those young people have been put under the charge of a man appointed for the purpose of instructing them. If the instructor fails to perform and instead give them casualness or disenchantment or cynicism, he is committing a crime which may not be cognizable in the eyes of law but it is a crime nevertheless.

non-performance, a crime !

The tragedy of the situation is that this crime is being committed day after day by thousands upon thousands of teachers. If we wish to formulate a new educational policy and see it implemented, the agents of implementation are those who interact with their students in the classroom. Before everything else, therefore, it must be ensured (and this is not the occasion to go into how this has to be done) that instead of the classroom being a scene of a daily crime, it becomes a scene of meaningful and creative interaction between the two. In this connection, I recall a motto displayed outside a Christian school. It reads as follows :

> Be careful about what you do,
> For you may be the only Bible
> Some people may ever get to read.

It's time to act to save values

Dr. G. N. Seetharam

Unless we do something now to check the fast decline of our values, cautions the author, we are in danger of losing our identity as a nation. This, in fact, poses the dominant challenge to our education system today. If we succeed in reversing this trend, then we will have salvaged the raison d'etre for our existence as an ancient land. And to stand up to the vicissitudes of change that is taking place very fast, we have to evolve, according to the author, an alternative paradigm of value structure emanating from documents like the Constitution of India.

THE QUANTUM JUMP

AFTER INDEPENDENCE WE HAVE HAD in this country a virtual quantitative revolution in education. The magnitude of this revolution is staggering. Almost 100 new universities have sprung up. Half a million schools of various levels have been established. Thousands of colleges have sprouted. The total stock of engineers in India in 1947 was about 18,000. Today, we produce that number in less than a year. There were about 20,000 allopathic doctors in India in 1947. Today our medical colleges churn out almost 20,000 doctors in a single year. The number of literates in India in 1950 was roughly 60-65 million. Today there are about 300 million literates in this country. In fact, this number is more than the total population of any country in the world barring China. Many people usually think of India as a largely illiterate country but the fact is that at least in absolute numbers we are one of the most literate countries in the world. During this time we have built up a significant scientific-technical manpower which is unmatched anywhere in Asia (barring Japan), Africa or Latin America and matched by only a few Western countries and the Soviet Union.

not much qualitywise

Along with this 'arithmetical revolution' we have made qualitative advances. The products of some of our best institutions like the IITs, IIMs, etc. are comparable to the best in any part of the world. We are making not inconsiderable advances in frontier area research in nuclear energy and space research.

Bio-technology and genetic research is on the way. A considerable number of Indian scientists, doctors, engineers and technologists find a world market for their skills. One of the half-a-dozen doctors who operated recently the President of the United States was a product of the Indian educational system. So, at least in some areas the 'quantitative revolution' has leap-frogged into a significant qualitative shift.

all round progress, no doubt !

The multi-dimensional change charted above has come about in a framework of general societal change which, going by the dynamics of Indian history, has accelerated tremendously In no other period of India's long history had so much progress and change been made in a period of 40 years as after Independence. The India of 1986 is in all aspects very distant and very advanced than the India that was in 1947. The change has been multi-faceted and total. It has included the economy, the technologies used, the sectoral composition of the economy, the landscape, the political structure, the institution of caste, religion, family, etc., the communication revolution and the transport revolution have brought the world to India's doorstep. The transistor and now the T.V. are becoming ubiquitous even in India's rural areas. There is an increase in awareness and a consciousness of events at home and abroad. Aspiration levels are rising. The international and national 'demonstration effect' is making people more conscious of their relative and sometimes absolute deprivation. Naturally, all these torrents of change have shaken the very foundation of the Indian psyche and have led to a certain disturbance and confusion. Millions of Indians are going abroad and coming back with different impressions of other societies. Millions of foreigners are coming to India. The Indian reaction to this 'cultural invasion' of ideas in science, technology, life styles, religion, ethics, etc. has been ambivalent especially among the urban middle and upper classes. Totally new situations are arising which were not at all visualised in the ancient Indian scriptures. For example, in about a decade or so the question of sex between a human being and an advanced computer based humanoid is a real possibility in North America. What are the ethics of such an act? The earlier books of wisdom have no light to throw on such situations. The Indian value base is getting eroded especially in the urban areas. The 'future shock' has caught up with India.

"The Western man and societies in terms of technology have already entered the 31st century. The gap between them and us is widening. To norrow and, if possible, close the gap at least in technological terms within the space of say about a century is the greatest challenge to Indian ingenuity."

but still bigger challenge to face !

Meanwhile, in other parts of the world, especially in the West and Japan, the rate of change is mind-boggling Ideas come out as if they are mass produced in a factory. The current technological revolution in the West is without precedent in human history. Advances in genetics, biology and other fields have given the western man the capacity to produce life itself now and possibly even life comparable to human life in the distant future. The silicon chip revolution and the personal computer are making the factory outdated. The family and marriage are fast losing their base and other forms of experimental living has started. The colonisation of space may be possible sooner than we think. The curiosity, innovativeness, resourcefulness, imaginativeness and the problem-solving abilities of the Western man seem to be flowering limitlessly. In a search for endless frontiers, in seeking and resolving new challenges, western civilization seems to be going beyond nature's mandate. One feels sometime there may be blurring of distinction between 'man' and 'god' going by functions All this naturally is creating a lot of stress in the West also Many people are not able to cope up with it. Witness the mass suicide of 600 Americans in Guyana. The Western man and societies in terms of technology have already entered the 21st century. The gap between them and us is widening. To narrow and, if possible, close the gap at least in technological terms between the West and India within the space of say about a century is the greatest challenge to Indian ingenuity. In this the educational system has got a very big role to play. How India is going to respond to the 'Western challenge' and the 'Japanese challenge' in the next century will, to a considerable extent, determine India's role and place in the comity of nations.

"The greatest failure of the Indian developmental process is probably the value catastrophe which has occurred over the past 4 decades in India. It is the decline in the 'quality' of the present day Indian that is potentially more threatening than any atom bombs across the border."

alarming erosion of values !

In spite of the undoubtable advances made in many fields which were charted earlier, India and its educational system have gone wrong somewhere The greatest failure of the Indian developmental process is probably the value catastrophe which has occurred over the past 4 decades in India. Just as in a human being a nation which loses its values loses everything. It is the decline in the 'quality' of the present day Indian that is potentially more threatening than any atom bombs across the border. The old value structures codified by religion is slowly but surely getting eroded

among most communities in India The new value structures of a new India as envisaged in the Constitution of India, etc. have failed to take root. This has given rise to a peculiar schizophrenia among educated Indians. Fortunately, this 'split personality' has not yet acquired depth. There is some confusion as to what is right and what is wrong. It is a heroic struggle to appear to be sticking to the old set of values before society while in a sub-terranean fashion raionalising anti-value acions by the spirit of the times. It is a classic Dr. Jekyll and Mr. Hyde case ! Our educational system has been unable to arrest this decline of values. Nay, it itself is becoming a part of the decline. People who have gone through our educational system are more prone to this decline than people who have not been to school at all. In fact one notices that the higher one goes up the Indian societal ladder the more marked is the decline. The civilization and the ethic of hard work, enterprise, resourcefulness, etc. have not come to the people at large in this country. People are very change resistant. It took almost a decade for our banks to start accepting cheques signed by a ball point pen ! New attitudes, novel ideas, alternate life styles, etc. are not easily accepted. Attitudes whether in the family, school or place of work are authoritarian. Creativity is discouraged. It pays to fall in line. Conformist 'ideal type' behaviour is highly regarded though any exposure of the inherent dishonesties and internal contradictions of that behaviour are frowned upon. How are we, in this state, going to take up the challenges of catapulting a country of one billion people (which will be our popuation by the end of the century) to the technological age of the 21st century where the pace of change will be dizzying and those who don't keep pace will go by the way side How are we to face the challenge of a Japan progressing leaps and bounds,

"Unless we do something about the decline of values now we are in danger of losing our identity in the long run as nation. Herein lies the dominant challenge to the Indian educational system. The course can be reversed and has to be reversed."

of a south-east Asia galloping towards prosperity and of a Western civilisation going beyond our present contours of imagination. And, if we don't keep pace what will happen to India and its economic and political sovereignty and its rightful place in the world ? Our business community, barring a few exceptions, are losing orders everywhere due to the 'quick buck' syndrome concentrating on short-term speculative profits rather than long-term horizons. The elite is in the danger of losing its sensitivities and humanism. Lakhs of people without any proper shelter are being thrown out of metropolitan towns like Bombay in the name of 'beautification'. Surely there is something wrong in the upbringing, education and aesthetic sense of people who see 'beauty' in bulldozing wretched human settlements who are living worse than animals. It doesn't touch our sensitivities when we indulge in conspicuous and vulgar consumption patterns in a country where getting two meals a day is the very definition of god for at least 400 million people. Somewhere compassion and fraternal feeling towards fellow human beings are being extinguished gardually. In short, there is a debasement and an incipient brutalisation on its way. We are losing our ability to work in teams which was the prime reason for the Japanese miracle. We take pride in talking ill of each other and generally holding other countrymen in utmost contempt. Top secrets of the country are not thought to be worth more than a few bottles of drinks and mind you that is not an isolated phenomenon. It is a deeper malaise. A new phenomenon the "educated" goonda has become a mass type. The behaviour of these semi-literate goons who have come out of the portals in many cases of even universities would put to shame the traditional unlettered 'dada'. These 'educated' hoodlums are now the mainstay of the 'shock forces' of many political parties and a nexus is growing between them and organised crime leading to a deterioration in the quality of life and pollution of our social environment. In short, unless we do something about the decline of values now we are in danger of losing our identity in the long run as a nation. Herein lies the dominant challenge to the Indian educational system. The course can be reversed and has to be reversed. In succeeding in this we will have salvaged the *raison d'etre* for the existence of this ancient land.

and a new value paradigm needed !

The emphasis of our educational system should be not just to produce competent people which is important but to lay the seeds now for the emergence of a "new Indian". This has to begin from the roots. An alternative paradigm of a value structure which can stand up to the vicissitudes of change at least for about two generations have to be evolved. The source for a new value paradigm must come from such documents which mirror as aspirations and the framework of values of the Indian people as the Constitution of India. Further a deep study of all Indian religions may be made to bring out a set of compatible values which is in consonance with the aspirations of a liberal democracy entering the 21st century. In short, a moral code will have to be worked out. The ancient wisdom of the sages and saints of India must be tempered by the modern achievements of science and technology. Those "values" of our religions which do not mirror the aspirations of democratic India and its Constitution and is more like a dead weight

of the generations disturbing us from moving forward must be given a burial. It is time to stop clinging to a mythical past. The direction to look is a glorious future and how to go about it. A sense of Indianness will have to be brought about based on the values of secularism, democracy, scientific tamper and social justice. These values will have to be internalised by the students in seminars and discussions. Most of our schools and colleges have a one-way monologue of the teacher delivering the lecture. There must be active participation of the students in the process of learning and it is better that classes are a place for dialogues rather than monologues Most students are not interested in developing consciousness, awareness and a capacity for independent thinking. The entire system is examination oriented. This must be put an end to. There must be much more of a tolerance of unconventional thinking. Usually they are more talented ones. No attempt must be made to stultify creativity even along unconventional lines and pigeons hole them in a form. Young people need to grow up by questioning everything. They must be made to feel that they are a part of a great human drama, the task of building a prosperous country. Another factor on which attention is to be given is healthy mixing of boys and girls. While we resolutely condemn apartheid in South Africa we practice our own kind of apartheid in large parts of the country where young people of opposite sexes are inhibited from mixing and socialising. This does no good for a healthy human being. Young people should also be exposed to martial arts and self-defence. The development of the body and the mind go together. Martial arts training would also give them a sense of confidence arising out of strength. This sense is important in later life. The basic attributes of democracy and respect for the human being and his dignity must be inculcated. The absoluteness of the relationship between ends and means and their indivisibility should come out clearly. A spirit of healthy competition must evolve Young people must be imbued with an achievement motivation. An eminent American psychologist David Meclelland has, on the basis of a massive cross-national study, come to the conclusion that differences in rates of economic growth between countries are explained by the 'achievement motivation' of its youngesters. While this may be only partly true it is necessary that our young people are motivated through appropriate stories from epics etc. of the importance of achieving what one values in life or at least striving to achieve. Then there must be a striving to reach out to the unknown; a spirit of adventure and urge to conquer ideas and nature. Most importantly they must cherish a sensitivity to society around them, to the deprived, to the needy, to the handicapped. This could be inculcated through social service programmes. An educated Indian of a new generation must be tolerant of alternative patterns of thought and behaviour since after all no single human being is a monopolist of wisdom and righteousness. A deep faith in the possibility of knowing the regularities and change phenomena in nature, i.e., science tempered by ethics of the limits of science and the moral and social responsibilities of the scientist. A sense of fair play must be introduced and the ultimate satisfaction must be seen not in the satisfaction of the libido as among certain sections of the Western Youth but in self-actualisation or fulfilment of one's intellectual, moral and aesthetic potentialities. They must go beyond Maslow's first stages in the hierarchy, i.e., biological and security needs and move towards the needs of esteem and satisfaction arising out of commitment to a larger course, i.e., the cause of a prosperous and egalitarian India.

the time to act is now !

The emphasis in developments around the world is shifting from land use (in agricultural civilization) and industry-natural resources (current western civilization) to human resources as the ultimate factor of development (Japan). We have one of the largest stock of people sections of whom are comparable in intelligence to anyone around the world. We must harness this 'brain power' which we have in such abundance for purposive national goals. It must be seen that the children of the deprived classes who have undoubted potential but whose development (physical, mental, spiritual) is being hampered by lack of adequate nutrition are helped to overcome the nutrition gap and be active participants in the building of a new India. Our educational system and the 'new Indian' emerging out of it will be the answer of India to the Western and Japanese challenges. Thoughts and ideas emanating in India have influenced a larger part of the world than ideas emanating in any other country with the possible exception of Greece. In enabling the natuarl facility of young Indian to think lies the future of this ancient land. The task is realistic. The time to act is now.

"Further a deep study of all Indian religions may be made to bring out a set of compatible values which are in consonance with the aspirations of a liberal democracy entering the 21st century. In short, a moral code will have to be worked out."

Challenge of education
(a summary)

Yojana Correspondent

THE DOCUMENT CHALLENGE OF EDUCATION—A POLICY PERSPECTIVE released in August, 1985 by the Union Ministry of Human Resources Development for a nation-wide debate for evolving a new education policy over the 1968 education policy, states that education is a complex subject with wide ranging remifications. A definitive view on a new policy for education has to be finalised in consultation with the decision makers in the State and Central Governments, the parliamentarians, educationists, intellectuals, teachers, parents, students, entrepreneurs, etc. The document states various viewpoints in a forthright manner.

India is standing on a threshold of the twentyfirst century. To prepare for that and also to create a national environment for peaceful and harmonious development, it is necessary to reshape the education system since only education can imbue people with the knowledge, a sense of purpose and the confidence essential for building a dynamic, vibrant and cohesive nation, capable of providing its people with the wherewithal for creating better, fuller and more purposeful life.

The Constitution of India envisages a just, equitable and fraternal society to assure dignity of the individual and unity and integrity of the nation which in turn implies equality of opportunity, particularly in access to knowledge and skills.

The Indian polity is characterised by a concern for the individual which emphasises the importance of education for development of self-confident individuals with a commitment to democratic values and national unity.

why education ?

Education helps bridge the chasm of disparities between people, socio-economic groups and regions thereby reducing disintegrative tensions. It develops human resources, which have a multiplier effect on utilisation of all other resources. It is thus an investment in development.

Elementary education is the most crucial stage of education because foundation of all round development of one's personality is laid at this stage.

Vocational education is essential for providing manpower for economic growth and as a link between the production, employment and education processes.

Higher education provides ideas and men to give shape to the future and sustain other levels of educacation. It supplies a wide range of increasingly sophisticated manpower required in industry, services and administration.

Yet education system cannot remove all the shortcomings of society. As a sub-system of society, it tends to imbibe the characteristics of the total environment.

For social relevance of educational planning quantitative and qualitative objectives of education will have to be spelt out by those responsible for it.

The present state of education is largely because of excessive emphasis on degrees and an examination system which tends to evaluate students at yearly intervals tion and grades have lost much of their credibility

Unless this process is reversed by a reorientation of education, it will be difficult to contain exploitation, insecurity and violence. It is also necessary to counteract divisive forces arising from caste, religion and regional considerations which are straining the sense of national integration. Pride in national identity has to be rebuilt.

Education will have to be modernised to facilitate the modernisation of production, services and infrastructures.

state of education

Inspite of considerable progress made in education since Independence, the country has not been able to meet its aspirations from the overall coverage, equitable distribution and quality of education. In literacy, India is still amongst the most backward countries with literates accounting for only 36.2 per cent of population in 1981. Of this, women. Scheduled Castes and Scheduled Tribes are still at the level of 24.9 per cent, 21.4 per cent and 16.4 per cent respectively.

We are still far from fulfilment of the goal of universalisation of elementary education in view of the high rate of drop-out in classes I-VIII which is above 75 per cent. This is much higher among SCs, STs and girls.

The number of children going to middle, high and secondary classes has increased from 22 lakhs in 1947 to 340 lakhs in 1983. There are today 1,75,000 such schools compared to 13,000 in 1947.

The number of boys and girls passing higher secondary stage has risen from 2.37 lakhs in 1960-61 to 8.40 lakhs in 1981-82. Nearly 83 per cent of such students seek admission in colleges and universities. Only 20 per cent of these are able to find admission to professional or technical education.

As against the envisaged development of 50 per cent employment-oriented skills at 10+level in terms of the 1968 education policy, the student intake in vocational courses at 10+level reached just 60,000 by 1982-83.

Now the country has 5,246 colleges and 140 universities with an enrolment of 33.60 lakhs of whom 9.76 lakhs are girls. In 1947, there were 700 colleges and 20 universities in India with an enrolment of 4 lakhs.

While some significant achievements have been recorded, by and large, the basic objectives of the 1968 education policy to relate education more closely to life, expand educational opportunities, improve quality of education, emphasise development of science and technology, and cultivate moral and social values remain unachieved. Meanwhile, new learning needs have arisen following inexorable march of socio-economic growth and progress in science and technology.

Failures

People are generally apathetic to an education system which does not appear relevant to them. The school system seems to have become a part of a gigantic bureaucratic set up which does not provide sufficient scope for intervention at local levels and is also frustrating for teachers with initiative. Consequently, the education system has become largely the responsibility of the government.

The number of illiterates has gone up to 437 million in 1981 from 300 million in 1947. As a percentage of population literacy has progressed steadily from 16.67 per cent in 1951 to 36.23 per cent in 1985. There is, however, great disparity in the progress made between regions. The situation reflects the fact that the positive results from elementary and adult education are largely nullified by a high rate of population explosion. In any case, if things continue as they are today, there would be 500 million illiterates in India in AD 2000.

According to a UNESCO studies, adult literacy level of 70 per cent is critical threshold for universalisation of adult education.

An all-India Educational Survey of 1978 revealed that many primary and middle schools do not have basic amenities, such as buildings, black-boards, library facilities and play grounds.

The actual figure of vocationalisation at+2 stage is too insignificant to deserve mention. According to the 1968 education policy, 50 per cent of students at +2 level were to go into the vocational stream.

Taken as a whole the general condition of colleges and universities is a matter of concern as many of them are known for rampant casteism, regionalism and inbreeding. Some of them are virtual battlefields in which political and other factions backed by teachers and aided by other staff often fight pitched battles for power and supremacy.

There is a widespread feeling that the present state of higher education is largely because of overt and covert interference by external agencies.

The role of University Grants Commission, which is to maintain academic norms and promotion of innovative programmes, has come in for criticism to the extent to which it has not been able to uphold the standards of education or enforce a minimum level of performance of colleges and universities.

The quality and employability of college graduates is adversely affected as arts and humanities are offered as unilinear programmes of study unrelated to the requirements of real life. In the case of sciences, courses are designed to explain concepts without supportive arrangements in the form of laboratory apparatus, kits etc

The system of technical education is now facing serious problems of obsolescence of machinery and equipment and the lack of wherewithal for research and training in new technologies.

The role of teachers, which is central to all processes of formal education, leaves much to be desired. It is largely because of the politicisation of the teaching profession and that it has come to stay as the last choice in the job market. The manner of implementation of the merit promotion scheme for teachers is causing concern to them.

There are widespread disparities in the system of education from the consideration of access, equity and impact. Rural people in spite of their being in three-fourth of population get much less resources for education with the result that girls, children of SCs, STs and other weaker sections of society lag far behind the general norms.

The interface between education and job market is characterised by lack of complimentarity. There is nothing in the school system to increase proficiency of students for the unorganised sector in agriculture or related rural occupations.

decline in per pupil expenditure

The expenditure on education has gone down over the years despite increase in outlays from Rs. 114 crore in 1950-51 to Rs. 2,304.16 crore in 1976-77. Between 1950-51 and 1975-76 per pupil per annum expenditure went down from Rs. 468.9 to Rs. 330.9 for college education and from Rs. 1,640 to Rs. 890.1 for professional education, registering a marginal increase of 1.1 per annum in the case of elementary education rising from Rs. 41.9 to Rs. 55.2 respectively.

The share of elementary education on the plan outlays for education declined from 56 per cent in the First Plan to 35 per cent in the Second Plan, 34 per cent in the Third Plan and 30 per cent in the Fourth Plan. In the Sixth Plan its share was 36 per cent. Whereas the share of university and college education in the plan outlays went up from 9 per cent in the First Plan to 16 per cent in the Sixth Plan.

The States provide around 70 per cent of the overall plan expenditure for education. The most important factor for slow progress in education has been an acute paucity of resources. About 90 per cent of the allocation is spent over salaries and administration.

For effecting improvement in technical education measures to attract good teachers, increase inter-action with industry, involve the faculties in application of modern technology for benefit of the rural poor, reduce disparities between state colleges, regional colleges and Indian Institutes of Technology and establish networking arrangements between different types of institutions are the points to be pondered over.

It is argued to make private organised sector to support technical education to some extent, as it absorbs bulk of manpower emerging from such education.

new approach

A new approach to education is necessary. Mechanisms for formulating policies, allocating resources, ensuring inter-sectoral coordination, enforcing standards, monitoring and evaluation need modification. In the new approach, capacity to learn will be more important than what is learnt and continuing education will be emphasised. Social and moral values will receive much greater emphasis. Access, equity and quality of education will be ensured through rigorous planning.

Education policy is an instrument for shaping the future. It has an impact on a whole generation. Therefore, it needs involvement of those dealing with or interested in education, in an open ended discussion of various view-points and issues. Besides developing physically, intellectually and aesthetically integrated human beings with a scientific temper and democratic values and social awareness, education has to imbue the pupils with a healthy attituds to hard work and dignity of labour, commitment to principles of secularism and social justice and dedication to the integrity, honour and the development of the country. In addition, education has to equip people with necessary knowledge and skills for economic development and employment. Besides integrating the individual into the social system, education also reduces disparities between human beings. Hence, equal access to education for all citizens a national imperative. Education is an essential input for all spheres of development.

the challenge

There is a widespread feeling that the system of education cannot be improved by marginal changes and this is the time for attempting its radical transformation.

Inevitably, any radical change in the education system will come in conflict with vested interests benefiting from the present state of education. Changes in the examination system, innovative approach to teaching, development of new curricula, enforcement of discipline, restructuring of management and decentralisation of the administrative authority will encounter strong resistance.

Depoliticisation too will be opposed not only by politicians who may lose their cadres but also by some

of the academic and non-academic staff who will lose their capacity to hold institutions to ransom.

The other constraints relate to the present orientation of media such as lack of trained manpower of softwares development, non-availability of a television channel committed to educational use and the absence of well established pedagogy for distance education.

The inherent difficulties faced by the poor regarding their participation in education has to be a major problem in universalisation of elementary education.

The joint commission of Centre and States may have to be set up to study the problem of resources for education to work out a strategy for mobilising these on a long term basis. For without adequate resources it will not be possible to fulfil the objectives of universalisation of elementary education, expansion of vocational training, removal of illiteracy, improvement of teaching and establishment of institutions of excellence.

Now that education is in the Concurrent List of the Constitution, the Central Government will have to decide upon the parameters of intervention for influencing the national education system for a qualitative improvement in prioritisation and performance. In this context and in relation to the objective of national integration the need and means of establishing a uniform national core curriculum will have to be considered.

The much debated issue whether the Central Government should assume some powers for depoliticising and modernising the universities will also have to be decided through consultations.

India will require roughly 22 lakh additional teachers by 1990 over 21.7 lakhs in 1981. These estimates are based on the quality of school education remaining unchanged. Provision of a minimum physical facilities cannot be delayed.

A strategy for the spread of education and improvement of its quality is unthinkable without establishing a learning society in which people of all ages participate in continuing education. This will provide dynamism to the programmes for family welfare, energy conseravtion, prevention of deforestation, health care and immunisation besides expanding the base for democracy.

Vocationalisation as a part of the 10+2 stage or secondary education will have to be linked with employment in industry, agriculture, services sector and various programmes of rural development besides preparing youngmen and women for self-employment.

All streams and stages of education will acquire much greater meaning if educational system is decentralised and its management assigned to the community participating in or benefiting from it. School education is sought to be placed increasingly in the hands of village committees, obtaining from them resources, assistance and guidance. District Education Centres will act as nodal point for educational planning, training, monitoring, extension and research.

With a view to reducing pressures on colleges and universities administartion of scholastic aptitude test for entry (admission) and delinking of degrees and jobs are suggested.

Other measures proposed for improving the relevance and quality of undergraduate and post-graduate education are a purposeful move for granting autonomy to more and more colleges, culminating eventually in moving entirely away from the system of common examinations and affilitation between universities and colleges. The objective is to develop closer links with the pupil's interests, society and the world of work.

A moratorium has been proposed on the expansion of the traditional pattern of colleges, favouring the opening of only those colleges which have a vocational character and are linked with identified multidisciplinary tasks in agriculture and home economics, forestry and land and water development, urban planning and transport management, public management and office management, etc.

A multi-pronged strategy for the new education policy should seek to integrate the recruitments of universalisation of elementary education or education of sophisticated manpower to deal with new and emerging technologies creatively, diversified vocationalisation, and the creation of an overall environment for development through adult and continuing education.

The new education policy that may emerge out of it, will succeed to the extent it reflects the unfragmented and total commitment of the nation to accord priority to the development of our human resources. ■

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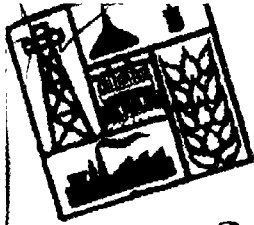
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Is Seventh Plan realistic ?

NEXT ISSUE

Are inter-state disparities growing ?

Now bank loans direct to IRDP beneficiaries !

UNDER A NEW SCHEME to be launched soon, the banks will give the entire amount of loan and subsidy in cash direct to the IRDP beneficiaries and not to the suppliers of equipment, livestock, etc. as has been the case so far.

This scheme has been approved by the Union Finance Ministry on an experimental basis in order to ensure necessary freedom to the beneficiaries to negotiate and settle suitable prices for the assets they propose to acquire and also give them the satisfaction of having purchased assets of their own choice.

The scheme envisages that when the assets to be acquired are of a standard type, make or brand, marketed by reputed suppliers, the beneficiary should have the freedom to select the product he wishes to purchase. The banks can either open a savings bank account in the name of the borrower or give him the amount in cash subject to the condition that the borrower should subsequently furnish to the bank a receipt of the item.

In the case of IRDP beneficiaries under industry service and business (ISB) sector when a number of sundry items are bought, disbursement upto Rs. 3000 will be made in cash, either in single lump sum or in stages depending upon the item to be purchased. In this case the beneficiary would be required to give a utilisation certificate to the bank without any corresponding cash memo, invoices, vouchers, etc. In such cases, after the disbursement, a follow up visit by the field staff of the bank is stipulated.

With regard to the programmes in animal husbandry, the purchase committees will be dispensed with and the beneficiary will be allowed to select an animal of his choice and make payment to the supplier against cash receipt. The scheme will allow the rural borrower to assess for himself the quality of the livestock and settle the price. The field staff of the bank will, however, be required to verify the actual acquisition of the animal by the borrower within a reasonable period.

In this system, one practical problem can be about the insurance cover. To solve this problem, the General Insurance Corporation is being asked to provide credit insurance automatically to all the animals purchased with the help of bank loan and subsidy. ❑

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On making public distribution system efficient

Dr. B. K. Singh

That during the Sixth Plan period, the public distribution system helped in checking prices of essential commodities and containing inflation, cannot be denied. But, according to the author, what is of crucial importance is efficient management of the system through selective approach and effective procurement and distribution to ensure uninterrupted supply of essential items at reasonable prices to consumers including those living in inaccessible areas of the country. He feels steps are also needed to protect consumers through strict enforcement of various consumer protection measures.

THE PUBLIC DISTRIBUTION SYSTEM has been functioning in India since 1939 and a large number of commodities besides foodgrains have come under its ambit The public distribution system (PDS) works on a national scale and its main objective is to make goods available to consumers, especially those belonging to the disadvantaged sections of society, at fair prices. The main items being distributed are foodgrains, including pulses in some States, kerosene oil, soft coke, sugar, cloth, vegetable oil, toilet soap, cycle tyres and tubes, cells, salt and tea These commodities are sold through retail outlets, co-operative societies and super markets That PDS has helped in containing inflation during the Sixth Plan period cannot be denied Training has been imparted to salesmen engaged in the supply and sale of essential consumption goods. Except in the case of pulses, PDS has suceeded in a large measure in holding the prices of cereals, sugar and edible oils as these commodities have been exercising considerable pressure on the price line. Pains have been taken by the authorities to streamline the distribution machinery, increase the number of fair price shops and to extend the area under PDS.

Keeping prices stable

From the point of view of maintaining stable price conditions, an efficient management of the supplies of essential consumer goods is of crucial importance. The demand for such commodities being largely inelastic, even a marginal fall in their output and availability often leads to a disproportionate increase in prices. Further, as most of these commodities are agriculture-based, their prices are subject to large seasonal variations. Public distribution will, therefore, have to play a major role in ensuring supplies of essential consumer goods of mass consumption to people at reasonable prices, particularly to the weaker sections of the community.

A large proportion of agricultural products, foodgrains as well as industrial raw materials, tends to come to the market immediately after the harvest when prices are depressed A mechanism for buying such commodities at prices which ensure a certain minimum profit to the producers and their distribution through the public channels would provide a two-sided shield to protect the poor . in relatively easy times, they would be assured a minimum profit margin and in critical times they would receive supplies of essential commodities at reasonable prices. The public distribution system will, therefore, have

to be so developed that it remains hereafter a stable and permanent feature of our strategy to control prices, reduce fluctuations in them and achieve an equitable distribution of essential consumer goods

Maintaining dual pricing

The public distribution system will also be necessary for operating the dual pricing arrangements in the case of certain commodities. Under these arrangements, a certain proportion of the output of the commodities involved is procured by public agencies or agencies designated by the Government at reasonable prices for distribution through approved channels, while remaining supplies may be disposed of by the producers at market prices. This would ensure availability of certain quantities of selected commodities to the consumers, particularly the vulnerable sections, at reasonable prices and to realise on the whole a fair price for their produce

Efficient PDS, a need

An efficient public distribution system requires a nexus between production, procurement, transportation, storage and distribution of the selected commodities.

In the past, responsibilities for these have been fragmented and thus there has been a lack of an integrated system of approach which alone can ensure an effective system of public distribution. It is proposed in the Seventh Plan to follow such an approach and to pay attention, apart from production and procurement, to transportation and proper storage of the commodities covered by the public distribution system. A linkage will be established among the concerned agencies in the Central and State Governments as well as public undertakings and co-operative institutions at various levels.

and a selective approach

In view of the complexity of the problems a selective approach is called for in the matter The essentiality of commodities to be covered under the system has to be determined with reference to the needs of the common man Applying this criterion, cereals, sugar, edible oils, kerosene, soft coke, controlled cloth, tea, coffee, toilet soap, washing soap, match boxes and exercise books for children, etc., could be treated as essential items for public distribution. The emphasis has to be on reaching all parts of the country, even if it means selection of a fewer essential commodities for supply through the system. Besides it is not necessary that the public distribution system all over the country would have a standardised list of commodities. The different regions may have different preferences. Further different commodities may assume importance in the scheme of public distribution at different points of time. But having regard to the standard of living of the vast majority of the people, it is obvious that the overwhelming majority of commodities needing the care of the public distribution system will be fairly common for the entire country. Depending on local conditions the public distribution agencies may undertake operations in respect of certain perishable commodities also, provided suitable storage facilities are available or can be provided.

uninterrupted supply line

For the success of the public distribution system the maintenance of the supply line of the commodities selected for distribution would be of crucial importance. Even a temporary interruption in supplies could create great hardship to the people. The Plan includes suitable programmes for increasing the production of essential articles of mass consumption. There would, however, be need for forward planning in respect of individual commodities, so that the domestic supplies could be suitably augmented by timely imports, whenever possible. Besides, adequate arrangements should be made for procurement, transportation, storage and distribution of the commodities at the Central, State and local levels. Buffer stocking may also be desirable in respect of certain commodities. In regard to foodgrains, the Plan envisages building up of buffer stock of 15 million tonnes to minimise the impact of weather fluctuations on their availability and prices.

For the effective functioning of the public distribution system, it would be necessary to revamp and strengthen its infrastructure and expand the system quickly to cover all areas in the country, particularly the backward, remote and inaccessible areas. Special attention will need to be given to rural areas, as the system is relatively less developed in such areas.

Procurement

At the national as well as State levels, arrangements generally exist for procuring essential commodities and supplying them through the public distribution outlets. In regard to foodgrains, the necessary operations are undertaken by the Food Corporation of India. In the case of sugar, the operations are undertaken by the Food Corporation of India in some States and Civil Supplies Corporations or Co-operatives in other States. The responsibility for importing and distributing edible oils has been entrusted mainly to the State Trading Corporation of India. Soft coke is being handled by the Department of Coal and Coal India Ltd. Kerosene is being handled by public sector corporations like Indian Oil Corporation, Hindustan Petroleum, Bharat Petroleum, etc. The production of controlled cloth has now been generally entrusted to the National Textile Corporation and distribution through the National Consumers Co-operative Federation. Similarl, tea is being procured and distributed by the National

Consumers Co-operative Federation and coffee supplied by the Coffee Board. The supply of match boxes is arranged through the Khadi and Village Industries Commission. As regard exercise books, the State Governments receive paper at controlled price for conversion into exercise books through their own organisations. For toilet soap, in the absence of any public sector agency, the necessary arrangements for supply are being made by the Indian Soap and Toiletries Manufacturers Association These arrangements will need to be kept continuously under watch and suitably strengthened or modified whenever necessary.

Distribution

In the States, distribution of essential commodities received from or through the Central agencies is, by and large, being handled by the State Civil Supplies Essential Commodities Corporations, State level apex consumer cooperative federations and other designated agencies In some States like Tamil Nadu, Punjab and Kerala, the Civil Supplies Corporations have opened their own retail outlets also.

The increase in the production of foodgrains and improvement in their supply in the free market led to a fall in the off-take of foodgrains from PDS during 1984-85. In 1984 the total release of foodgrains was 96 8 lakh tonnes which was 17 per cent less than the figure for 1983 when 116 1 lakh tonnes was released. Out of the total sale of foodgrains in 1984, the figures for rice and wheat were 50 lakh tonnes and 46 lakh tonnes respectively The total sale during 1984-85 was estimated at 120 lakh tonnes (Economic Survey, 1984-85).

The monthly amount of sugar allocated to States in October 1983 was maintained at 3.13 lakh tonnes in 1984 also. An additional amount of 50,000 tonnes levy sugar was distributed to meet the spurt in demand during the festival season in 1984 Thus a total of 82 lakh tonnes of levy and non-levy sugar was distributed during 1984-85 as compared to 71 lakh tonnes during the last financial year The monthly 93 lakh tonnes in 1985 and 83 lakh tonnes in 1984.

The procurement of rice in 1985 was 85 lakh tonnes whereas only 66 lakh tonnes of rice was purchased in 1984. The total stock of rice in government godowns rose from 47 lakh tonnes in 1983 to 74 lakh tonnes in 1984 The figures for wheat are 93 lakh tonnes in 1985 and 83 lakh tonnes in 1984.

Bottlenecks

The problems confronting PDS are of three kinds :—

(*i*) Those concerning organisation,

(*ii*) Those concerning market forces, and

(*iii*) Those concerning finance.

Quality control, a must

The organization of retail and wholesale trade needs closer coordination. Little attention is being paid to the supply of unadulterated goods of proper weight to consumers. It is imperative to improve the quality of goods sold by consumer cooperatives and retail outlets If consumers are made quality-conscious they would not be lured away by private traders and the endemic practice of adulteration could be curbed PDS must give priority to quality control by arousing consciousness among consumers by holding demonstrations and publicity. Mass media can also play an effective role in this regard.

Greater diversification of PDS activities will not only enhance its usefulness but also provide financial stability to its units Norms laid down for membership, share capital, working capital and total turn-over must be rigorously applied In order to reduce dependence on loans, co-operative societies should increase their own funds and accept deposits from members at attractive rates of interest. Financial institutions should be encouraged by the Reserve Bank and the Government to make advances to central cooperative organizations State governments may consider participating in the equity capital of cooperative societies Members should be given a share in profits on the basis of their total annual purchases. The Government can give import licences to these societies to enable them to stock goods of high quality and attractiveness A sinking fund must be provided to tide over financial downswings. Promoters of cooperative societies need to be trained in various aspects of cooperative principles and management practices. Women should be involved in large numbers for the success of consumer co-operatives. Provision of rebate on sale of goods will boost the turnover of PDS The capacity of godowns has to be increased and system of inventory control must be introduced. Employees could be made more efficient if commission is given to them on the basis of total goods sold by them

Fixation of prices

It is necessary to frame suitable purchase and price policies for public distribution units. Prices should be fixed in such a way that those units are able to earn reasonable profits and increase their capital. Since one of the objectives of PDS is to keep the price level under control, a profit rate of 6 to 10 per cent would be quite adequate. Prices of goods sold by them must be a little less than those in the open market. The location of retail outlets must be near the residential area. Proper display of goods on the counter and attractive

packaging would go a long way in improving the image of co-operative societies. Self-service counter may also be opened as an experimental measure. Arrangements to send the goods to the houses of customers or home delivery service could be stated. Prices of articles must be written on them.

Purchases thro' cooperatives

It is heartening to note that attempts are being made to combine credit, marketing and agricultural departments in one society. Grading of agricultural products will benefit the farmers and induce them to adopt improved agricultural practices like use of HYV seeds. An important function of co-operative societies would be to eliminate middlemen and sell agricultural implements, seeds, fertilizers and other services to the farmers directly. Godowns must be established in rural areas in order to minimise damage to foodgrains and reduce the hold of banias on farmers. For this purpose the State Bank of India should give loans to co-operatives. The Food Corporation of India should purchase foodgrains through cooperative societies and provide assistance to them in marketing management Cooperative societies could help rural artisans and thus encourage the sale of goods of village industries.

The co-operative in both urban and rural areas are selling consumer articles worth about Rs. 1600 crores per annum. The Civil Supplies Corporation operations at the retail level are however rather limited The co-operatives and Civil Supply Corporation together, therefore, seem to be meeting only a small proportion of the essential consumer needs at present Their share in the trade in essential commodities will need to be increased substantially in the Seventh Plan period.

Strengthen PDS

For the successful operation of the public distribution system, it would be necessary to revamp and strengthen the existing arrangements. In the States, where a strong co-operative movement exists, the apex body of consumer co-operatives and marketing societies may take up the responsibility of procurement, storage, movement and distribution of essential commodities However, in other States, it would be necessary to strengthen the existing Civil Supplies Corporation|Essential Commodities Corporations.

The Civil Supplies Corporations may have to construct some godowns also for meeting their requirements, where adequate godown space is not available from the Central and State Warehousing Corporations, co-operatives, etc The Corporations will also have to build up a cadre of trained personnel. For this purpose effective training will be necessary.

It has been found in practice that neither the private sector nor the co-operatives volunteers to go to inaccessible areas, especially areas inhabited by the tribals and weaker sections of the community because of the non-viability of operations there. The State Governments will have, therefore to shoulder this burden through their own Civil Supplies Corporations or other suitable agencies. Some subsidy may also have to be given to retail outlets in such areas in the initial years of their operation.

Adopt new marketing techniques

Emphasis has to be placed on efficient and socially-oriented marketing techniques and every effort will have to be made to reduce the cost of distribution by taking advantage of the economics of bulk handling, avoiding cross-movement of goods, building up a net-work of rural godowns and use of non-mechanised means of transport from these godowns to consumer centres as far as possible. Besides some fast-selling items may be allotted to fair price shops in the public and co-operative sectors to improve their financial viability They should also be encouraged to handle postal articles and family planning materials.

Co-ordination and linkage between the consumer' and marketing co-operatives would be strengthened so that the former could procure farm products directly from the farmers. Further, with a view to enabling the cooperatives to play a larger role in the public distribution system and the supply of essential articles in the rural and urban areas, considerable expansion in the storage capacity of co-operatives is envisaged in the Seventh Plan.

Linkage with Plan

The usefulness of the public distribution would be enhanced through horizontal linkages with Plan programmes. For instance, mobile fair price shops may be organised at centres where rural works are in progress. Regular fair price shops could be established in areas where large-scale employment is generated under the Plan projects and programmes. The possibilities of non-formal staffing, i.e., use of personnel on part-time basis, may also be explored in appropriate places in order to minimise costs.

It is necessary to provide a measure of protection to consumers in relation to quantity, quality and prices of at least essential consumer goods. The basic legal framework for providing such protection already exists. However, it needs to be reviewed and strengthened. Steps should be taken for more effective enforcement of the laws and the various consumer protection measures. Besides, there is need for a co-ordinated price policy in regard to important consumer goods in order to enable reasonable prices of such goods. □

. . . with buffer stocks!

Arabinda Ghose

With agriculture receiving large allocation during the Seventh Plan period, one can be reasonably certain that the rate of increase in foodgrains production every year will remain ahead of the increase in the country's population. But, the author feels, one can never take a chance with such a sensitive item like foodgrains and hence the country will have to continually maintain buffer stocks of foodgrains to guard against the vagaries of nature effecting foodgrains production and its prices.

ONLY SIX YEARS AGO, during the year 1979-80, India was faced with a serious problem on the agricultural front because of widespread drought in the country. Considered to be the worst in a century till then. This drought had resulted in a steep fall in the production of foodgrains and a situation had then risen akin to that in 1966-67, when there was famine in certain parts of the country owing to the failure of the monsoon for two consecutive years.

However, the situations in 1966-67 and 1979-80 were different in one very vital respect While India had gone all over the world importing foodgrains to stave off famine and starvation during the earlier drought period, and the country literally lived from "ship to mouth". not a single grain of wheat or rice had to be imported in 1979-80, nor was there great fluctuation in foodgrains prices that year.

Growing role of FCI and PDS

Such a dramatic change within a span of only ten to twelve years can safely be attributed to the existence of two organisations developed during this period. One was FCI—the Food Corporation of India at the Central level. And the other was PDS—the Public Distribution System set up by the States for sale at fair prices basic necessities of life, particularly wheat, rice and sugar. In 20 years since its inception, the Food Corporation of India has come to a stage today when it is experiencing difficulty in finding storage space for the nearly 30 million tonnes of foodgrains procured and stocked by it. The fair price shops, which receive foodgrains from the FCI for sale to consumers have now extended to every nook and corner of the country, their number now being about three and a half lakhs. These shops, the majority of which are in the rural areas, not only make available foodgrains, sugar and a host of other commodities to the people, they also are instrumental in stabilising in the process the prices of these commodities.

Rationing of foodgrains, sugar, kerosene and certain other commodities came to India during the second world war period because of the shortage of these commodities, aggravated by the great Bengal famine of 1943. After the war and by the time India became free, the situation had improved considerably and it was possible for the late Mr. Rafi Ahmed Kidwai, then India's Food Minister, to dispense with the system in the early fifties.

However, the stagnant agricultural production and an unchecked population boom soon sent India scurrying back to the system by the time the sixties set in. Even though there has been a green revolution in the country since then and as mentioned earlier, India now faces the problem of plenty in the foodgrains front, the fair price or ration shops continue to function and their number is ever on the increase. These ration shops today however, perform a vital role in keeping the prices of foodgrains and some other commodities they deal in stabilised. They also have been instrumental in making the people living in rural and remote areas less dependent on the whims of private grain dealers who can manipulate supply and prices in their favour.

Covering more items

From dealing in wheat, rice, sugar and some coarse grains, the fair price shops have now extended coverage of essential commodities by including edible oils, kerosene, match boxes, soaps, torch cells, cycle tyres and tubes, controlled cloth and soft coke also for sale, in order to make the lives of people living in rural, tribal and remote areas a little less difficult. PDS, that is the Public Distribution System, is continuously on the march, in accordance with the new 20-point economic plan.

However, as pointed out by the Food and Civil Supplies Minister in his address to the seventh meeting of the Advisory Council on Public Distribution recently, the system is not always efficiently and effectively run in many states. This is borne out by the fact that despite huge buffer stocks, there have been cases of increase in prices of foodgrains in certain areas and also of their shortages. Besides, there has not been appreciable increase in the off-take of foodsgrains particularly wheat from fair price shops in recent months.

Some bottlenecks

In addition, there are complaints of poor quality of rice and wheat supplied by many fair price shops. In some cases, the variety of the grain supplied by the FCI from the Central pool do not suit the palate of the consumers such as in the case of Kerala where rice from Punjab has been called "iron rice" because of the long time required to cook it. It has also to be admitted that complaints about malpractices indulged in by fair price shops are voiced frequently. Besides, and this too is a common complaint, smaller towns and villages often do not get requisite quantities of these commodities with the result that they become victims of supply and price manipulations.

Need for a review

It is in this context that Mr. K. P. Singh Deo called for a review of the working of the fair price shops in each district, particularly those which are situated deep in the interior parts of the country. The Ministers from various states, who attended the seventh meeting of the Advisory Concil on Public Distribution, discussed an action plan for strengthening and expanding the public distribution system which includes among other things opening of new fair price shops, wherever necessary, in order to provide easy physical access to consumers and supply of a ration card to every family both in the rural and urban areas.

They also emphasised the importance of a proper monitoring system at the block, district and the state headquarters level for ensuring upto-date information in respect of supply or its absence of the essential commodities to the fair price shops. In fact, the state governments should take effective steps to devise an efficient monitoring system for timely and strict action on shortages and artificial scarcities, hoarding and unfair trade practices.

Another important topic which came up for discussion was the training of personnel manning the fair price shops.

It was pointed out at this meeting by several participants that fair price shops often were not viable because of the low margin of profit on items they deal with. While some states felt that the profit margin should be increased, Haryana stressed that the existing grocery shops in that state could become fair price shops since these shops dealt in other items too and were thus already viable. But the Minister asked the states to take advantage of the scheme under which fair price shops were given certain commodities for sale at the same terms and conditions at which they were supplied to the wholesale dealers of these items. Such items included match boxes, soap, torch cells, razor blades, cycle tyres and tubes. Unfortunately, as he said many states have yet to take advantage of this scheme, which can improve the viability of the ration shops.

wheat to the poor

One of the most important topics discussed at the meeting was formulation of the scheme for giving cereals at lower prices to the tribal and other poorer sections of the population at lower prices in order to meet their nutritional requirements. As is well known, India now has about thirty million tonnes of foodgrains in stocks, including more than twenty million tonnes of wheat. Because of the good wheat harvests in the last four years, there is easy availability of this commodity in the markets. As a result, there has been a sharp fall in the off-take of wheat from the fair prce shops. This is therefore the right time for providing wheat to the under-privileged people of the country at cheaper prices.

The Union Government earlier announced that one million tonnes of wheat would be provided for the various rural poverty alleviation programmes to be given to those employed under several such schemes at a reduced rate :

Need for buffer stock

As it is, with agriculture receiving large allocation during the seventh plan periol, one can be reasonably certain that the rate of increase in foodgrains production every year will remain ahead of the increase in the country's population. But one can never take a chance with such a sensitive item like foodgrains and hence the country will have to continually maintain buffer stocks of foodgrains to guard against the vagaries of nature effecting foodgrains productions.

But as stated by the Minister of State for Food and Civil Supplies, Mr. K. P. Singh Deo, the functioning of public distribution, availability of essential commo-

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...and plugging loopholes

Yojana Correspondent

IN AN EVALUATION STUDY of the working of the Essential Supplies Programme and public distribution system under the 20-point programme, the Programme Evaluation Organisation has detected several loopholes in the scheme and suggested a number of measures for removal of genuine difficulties faced both by the beneficiaries of the programme and the fair price shopkeepers. If the recommendations are implemented faithfully, the report reveals, it will contribute towards the greater convenience of the consumers as well as better efficiency in the operation of the fair price shops.

In all, the evaluation study coveed 1325 ration-card holders (660 from urban and 665 from rural areas), 265 fair price shopkeepers and 33 seniormost officials at the district level and 18 at the state level incharge of the civil/food supplies department for eliciting their views on the issues and problems that surfaced during the course of study. The study covered 18 states except Assam, Meghalaya, Nagaland and Sikkim and nine Union Territories. The data was collected from the beneficiary house-holds (ration-card holders), fair price shops, districts and state level officials in charge of civil supplies. The data collected relates to three points of time covering December 1980 December 1981 and October 1982 preceding and ten months after launching of the revised 20-Point Programme.

Shortcomings

While the study expresses satisfaction over the adequacy of the coverage and administrative machinery of the programme, it has found out a number of inadequacies in its operational aspects which provide scope for further improvement.

According to the study, the impact of the programme in terms of the coverage of additional population during January—October, 1982 was small. As many as 81.11 per cent of the selected beneficiary households were old beneficiaries of the civil supplies programme and another 14.80 per cent were those who became beneficiaries before the introduction of the Essential supplies programme under the revised 20-Point Programme in 1982. Thus, 95.91 per cent of the total beneficiaries were old ones, only 4.08 per cent were new beneficiaries who began to draw their rations after the launching of the programme.

Another shortcoming related to drawal of commodities from fair price shops Out of 11 commodities examined in this report, there was not even one commodity which the ration card holders drew regularly. Irregular supply and poor quality of commodities made available through fair price shops were the two most important reasons for not drawing rations regularly by the beneficiary house-holds.

The commodity coverage disclosed only nine commodities were made available by 17 per cent or more of the shopkeepers Of these, sugar was being distributed by over 92 per cent fair-price shops, rice by about 80 per cent, wheat 67 per cent, kerosene 53 per cent, palm oil 52 per cent, suji, maida rape-seed oil and wheat flour by about 17 to 19 per cent of them. Besides these nine comodities, controlled cloth was distributed by 11 36 per cent and exercise books by 5.68 per cent of the total fair-price shops studied

Incidence of not lifting of sanctioned quotas by fair price shops was higher in rural as compared to urban areas in the case of almost all commodities. This was higher in rural area even in the case of sugar. Poor quality of cereals in fair price shops and easy availability of these in free open market were the reasons for not lifting them from fair-price shops.

In the case of all 11 commodities except controlled cloth and wheat flour, often enough the quantity sanctioned was not the quantity allotted. Quantity lifted also did not correspond to the quantity sold. Every onward linkages led to diminution in the quantities of the commodities. In the five commodities, wheat, rice, suji, maida and exercise books, the quantity sold through fair-price shops were broadly 33 to 50 per cent less than their quotas sanctioned for release and sales, thus rendering 33 to 50 per cent of the quantities of these commodities as stock extra to the distributional requirement at given points of time.

Yet another drawback related to a considerable lack of timely supply to the shopkeepers Fortynine per

cent of the fair price shop keepers had to make more than one visit per month for lifting of their monthly quota of different commodities. The other constraints related to non-profitability of running fair price shops. About 76 per cent of the shopkeepers said this. About 93 per cent shopkeepers gave low rate of commission, followed by high cost of overheads (38.46 per cent), underweighting at the warehouse supply points (25.13 per cent), and poor quality of commodities supplied leading to unsold stocks (13.85 per cent).

Thus, irregular availability of the commodities concerned, their inadequate supplies, poor quality and under-weighting were listed to be the four major difficulties faced by beneficiary house-holds and the fair price shop keepers.

Non-existence of consumer protection

Not a single respondent, whether urban or rural, reported the existence of a consumer protection movement in his area in eight out of the 18 states taken up for this study.

How to make it effective

The evaluation study has suggested several measures for effective implementation and working of the Essential Supplies Programme and public distribution system. It calls for bringing out a handbook dealing with different aspects of the programme by the Department of Civil Supplies of the Union governmentment for readymade guidelines to enable the functionaries of the programme to effect its proper working. It suggests a dual pricing policy in order to allow the benefits of the subsidy to accrue to the poor. The staff of the civil and food supplies department should be of its own and not on deputation from other departments.

The report has suggested steps for minimising delay in making essential commodities available to the fair price shops in time and at prescribed frequencies. To effect this, the report recommends computerisation of the distribution mechanism at the all India and state levels.

The study further suggests selling of wheat and rice cereals by fair price shops in 5, 10 and 20 kilogram bags, neatly stitched and certified as to quality of the contents to avoid tempering with their quality. These two cereals are staple items of food all over the country. This will go a long way in ensuring commodities of good quality, clean and free from all foreign matter.

In the assessment of the report only those new commodities should be considered for inclusion for distribution by fair price shops, which are consumed by a large percentage of population of state, which are prone to price fluctuation and have effective demands The report suggests streamlining of procedures prescribed to minimise variation between the sanctioned quantities of the commodities and those actually made available for distribution at fair price shops. Government should get the position in regard to the quantities of different commodities sanctioned, allotted, actually lifted and really sold investigated from time to time to ensure proper and effective supply line of commodities, for widening the coverage of population proportionately or increasing the norm of per unit supply of items.

Other suggestions are in the direction of ensuring fair and correct weighing of commodities at the issue points, ascertaining of financial viability of those given licences to run fair price shops along with a provision for periodical checking so as to disqualify such fair price shops as may not have adequate availability of funds, space and manpower with them.

The whole structure of commission (profit margins) allowed to fair price shop-keepers on the sale of different commodities should be examined critically and reveiwed from time to time to ensure that shopkeepers do get a fair return on their investment.

As far as exercise books are concerned, these may be made available to students directly through schools and general book and stationary shops at controlled prices.

About the consumer protection movement, the report calls for formation of consumer councils in urban and rural areas in association with local leaders, voluntary organisations, youth clubs, gram panchayats and others.

The report urges the state governments to empower village panchayats to check and supervise the working of fair price shops in their respective jurisdiction in all states where they do not have powers at present.

Background

The evaluation study was undertaken at the instance of the Planning Commission to examine the workings of the Essential Supplies Programme, i e. Point No. 17 of the revised 20-Point Programme launched in January 1982 and suggest measures to plug loopholes in its working. As envisaged in the Sixth Five Year Plan, the Essential Supplies Programme and Public distribution system is to remain "a stable and permanent feature of our strategy to control prices, reduce fluctuations in them and achieve and quitable distribution of essential consumer goods." The aspects especially covered in the programme relate to reaching certain targets of vulnerable sections of people including industrial workers and students. The programme is also in the direction of extension and strengthening of the distributive network to rural, backward and far flung areas and promotion of a strong consumer protection movement. ☐

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to make it run on a sound basis !

Dr. Prasoon Kumar Roy

The author here examines in general the working of the public distribution system in the country. He says procurement price of goods from producers is too low to induce them to sell their marketable surplus. Compulsory levy is no solution either. Inefficient transportation, inadequate storage facilities and lack of coordination between the Centre and the States about the price policy are other bottlenecks. He suggests measures to make the system run on a sound basis.

ECONOMY, AS IT IS IN INDIA—where marginal storages lead to disproportionate distortions in supplies, distribution and prices ensuring availability of consumer goods at reasonable prices to the masses, is of crucial importance So it requires a dependable, effective and efficient distribution system. The task of distribution involves making goods available at the right time and the right place for meeting the needs of the consumers at a price that is acceptable to both the consumer and the supplier This is an enormous task especially in a country like India where 630 million consumers reside in nearly 600 thousand cities, towns and villages spread across a large sub-continent. In this context, the role of Public Distribution System has been emphasised much particularly after Independence when the Government accepted the ideal of socialistic pattern of society to be achieved under the banner of planned development with social justice. Perusal of the different Five Year Plans indicates that in the First Five Year Plan, there was emphasis on a system of distribution for foodgrains in cities and deficit areas. The coverage of the PDS was extended during the Second Five Year Plan period from foodgrains to other essential commodities and raw materials.

What plans sought to do

The Third Plan stressed the importance of procurement and distribution system for the broader objective of rice stabilisation The approach was to introduce institutional changes in the private mechanism by expanding coverage of consumer co-operatives

The Fourth Plan further aimed to broaden its scope to cover rural areas, include other goods of mass consumption and distribute them with the help of co-operative stores

The Fifth Plan advocated an effective PDS for food grains and other essential commodities and related it with price, incomes and wages policy

The Draft Sixth Five Year Plan (1978—1983) pointed out towards further expansion to the PDS and proposed to cover more items to increase distribution outlets and encourage co-operative outlets.

The Sixth Five Year Plan (1980—1985) also pointed out that "Public Distribution will, therefore, have to play a major role in ensuring supplies of essential consumer goods of mass consumption to the people at reasonable prices particularly to the weaker sections of the community". Though the Public Distribution System does not necessarily improve the distribution of income, it helps to prevent a deterioration in distribution in inflationary conditions. It is, therefore, worthwhile to examine in general the performance of Public Distribution System in India and to suggest a few measures in order to make the system effective in achieving its objectives.

What PDS aims at ?

The analysis of the working system of Public Distribution System reveals that the broad objectives of this system are : (i) to make sure of the availability of foodgrains at reasonable prices, especially to the vulnerable sections of the population ; (ii) to rectify the existing imbalance between the supply of and demand for consumer goods; (iii) to hold up the hoarding and black-marketing in essential commodities ; (iv) to ensure social justice in the distribution of basic necessities of life; and (v) to even out the fluctuations in prices of mass consumption goods. The various strategies deployed to handle the Public Distribution System are categorization of the wholesale trade of foodgrains, compulsory procurement of marketable surplus, building up of buffer stocks, statutory rationing, dual pricing, support prices etc. Food Corporation of India, Fair Price|Ration Shops, Co-operative Stores and Super Bazars are some of the important distribution outlets.

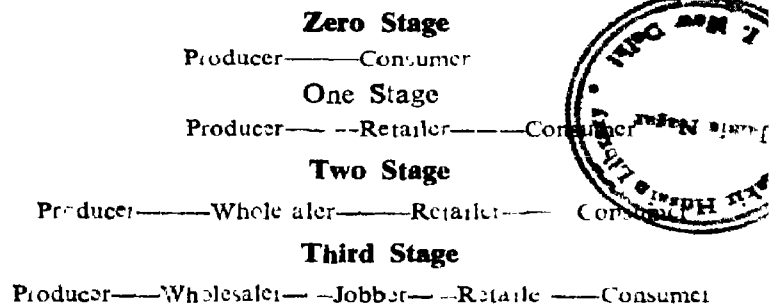
In the above context, it may be pointed out that the policy framework of the Public Distribution System, thus, envisages the identification of essential commodities for each area, formulation of commodity budgets, effective monitoring of retail prices of consumer goods, selection of vulnerable areas with accent of benefiting the weaker sections, streamlining of the distribution system with emphasis on progressive co-operativisation, judicious market intervention by co-operative organisations, closer link between co-operative marketing societies and consumer societies and adequate administrative arrangements to ensure effective enforcement of the measures designed to protect consumers and made the Public Distribution System successful in achieving the objectives.

The agencies involved

The network of Public Distribution System as exists at present is that in regard to foodgrains, the necessary operations are undertaken by the Food Corporation of India. In the case of sugar, the operations are undertaken by the Food Corporation of India in some States, and Civil Supplies Corporation or Co-operatives in other States. State Trading Corporation of India is mainly responsible for importing and distributing edible oils. Soft coke is being handled by the Department of Coal and Coal India Limited, and kerosene by the Public Sector Corporations like Indian Oil Corporation, the Hindustan Petroleum, Bharat Petroleum etc. Controlled clothes are generally produced by the National Textile Corporation and distributed through the N.C.C.F. and coffee by the Coffee Board. The supply of match boxes is arranged by the Khadi and Village Industries Commission, toilet-soap by the Indian Soap and Toiletries Manufacturers' Association. In the States, distribution of essential commodities received from or through the Central agencies, is, by and large, being handled by the State Civil Supplies Essential Commodities Corporations, State Level Apex Consumer Co-operative Federations and other designated agencies. In some states like Tamil Nadu, Punjab and Kerala, the Civil Supplies Corporations have opened their own retail outlets also.

In order to analyse its working, it is also essential to look into the distribution channel aspect of the Public Distribution System at the consumer level. The task of distribution involves making goods available at the right time and at the right place for meeting the needs of the consumers at a price that is acceptable to both the consumers and the suppliers.

The overall distribution system may be characterised as having a certain number of stages or selling intermediaries, between the producer and ultimate consumer. Figure I illustrates the four different distribution channels ranging from zero to three stages :

Of the various forms of prevalent aforesaid distribution system, the Public Distribution System comes Three Stage-type in which Food Corporation of India acts as wholesaler, State as jobber and fair price shops as the retailers. On the other hand, if we consider the case of BISCOMAUN of Bihar, there exists both systems of distribution—it applies three stages of distribution in pool fertilizers and two stages of distribution in non-pool-fertilizers as it also produces some of them like Harabahar and Shaymala mixture.

It is worthwhile to analyse the recent trends and major constraints related to the Public Distribution and its procurement operation concerning two major foodgrains namely, wheat and rice in recent years (1974—1982). It would be appropriate at this stage to remember that there are many other essential consumer goods too which are distributed under the Public Distribution System but the rationale behind selecting these two consumer goods for the present research investigation lies in the greater importance they enjoy among the consumption goods constituting the major items of food of the people, the greater regularity in the offtake of these goods from the Fair Price Shops under the Public Distribution System, besides the desire to make the investigation manageable and meaningful.

TABLE—1

Production Procurement and Public Distribution of Rice 1974—1981

Year	Production		Procurement		Col 4 as % of Col 2	Public Distribution (Quantum)
	Quantum	% Change over the previous year	Quantum	% Change over the previous year		
1	2	3	4	5	6	7
1974-75	39.6		3 8	.	9.6	3 8
1975-76	48 7	23 0	6 3	66 8	13 0	3.2
1976-77	41 9	—14 0	4 4	− 30 1	10 5	4.6
1977-78	52 7	20.5	4 9	11 4	9 3	3 2
1978-79	53 8	2 1	6 2	20 4	11 5	4 0
1979 80	42 2	− 21 6	3.8	− 38 7	9 0	5 9
1980-81	56 0	32 7	5 6	47 4	10 0	4 1

Source : *Report on Currency and Finance*, Reserve Bank of India, 1978-79, Vol I, p 16 for figures relating to 1974-75 and 1975-76 and 1980-81 Issue, Vol I, p. 17 for figure relating to 1976-77 onwards

Figure in Col 6 for 1977-78 onwards includes quantities released under the *Food for Work Programme* (National Rural Employment Programme)

An anaysis of the data contained in Table 1 reveals the following significant trends in respect of the procurement of rice during the period 1974—1981 :

(1) A positive relationship exists between production and procurement of rice, both changing in the same direction, though the extent of change has varied;

(2) Procurement as percentage of production has varied between 9 and 13; and

(3) Procurement in the year has been adequate more than adequate to provide the quantum of rice actually distributed in that year except in 1976-77 and 1979-80 when production and procurement have declined.

Further, an analysis of the data contained in Table 2 brings out the following significant trends in regard to the procurement of wheat during the period 1974—1982 : (1) A positive relationship exists between production and procurement of wheat except in 1976-77 ; (2) Procurement as percentage of production has varied between 16 6 per cent and 22.8 per cent, and (3) Procurement in the year has been less than adequate to provide the quantum of wheat actually distributed in that year except 1978-79 and 1980-81.

TABLE– 2

Production, Procurement and Public Distribution of Wheat 1974– 1981

(Million Tonnes)

Year	Production		Procurement		Col 4 as % of Col 2	Public Distribution (Quantum)
	Quantum	% Change previous year	Quantum	% Change previous year		
1	2	3	4	5	6	7
1974-75	24 1		4 0		16 6	5 7
1975-76	28 9	19 9	6 6	65 0	22 8	7 5
1976-77	29 0	0 3	5 2	− 21 2	17 9	6 4
1977-78	31 8	9 7	5 5	5 8	17 3	6 9
1978-79	35 5	11 6	8 0	45 4	22 5	7 5
1979-80	31.6	−11 0	5 8	—27 5	18 3	8 8
1980-81	36 0	13 9	6 6	17 2	18 3	4 2

Source: *Report on Currency and Finance*, 1978-79 Issue, Vol I, p. 14 for figures relating to 1974-75 and 1975-76 and 1980-81 Issue Figures in Col 6 for 1977-78 onwards include quantities released under the *Food for Work Programme* (National Rural Employment Programme)

A comparative analysis of the data contained in Tables 1 & 2 reveals following notable trends during the period 1974—1981 :

(i) The yearly production of wheat has been less than the yearly production of rice.

(ii) The yearly procurement of wheat has been greater than the yearly procurement of rice, and

(iii) The yearly distribution of wheat has also been greater than the yearly public distribution of rice.

Obviously, it follows from the above-mentioned points that from the point of view of procurement and public distribution, wheat occupies a more important place than rice. However, there is an imperative need to augment the quantum of procurement not only of wheat but also of rice to render possible further expansion of the Public Distribution System in the Indian economy. This reminds for the removal of the constraints to which procurement operation so far has been subject.

Bottlenecks

There exists a number of constraints in the operation of the Public Distribution System There are serious constraints to which the procurement effort of the Indian economy is subject. Due to the existence of these constraints the operation relating to procurement of wheat and rice has not been performed as satisfactorily as is required for the vigorous execution of the Public Distribution System In the first place, the procurement price offered by the public procurement agencies to the producers has been below the open market price at which the private procurement agencies have been ready to purchase the goods Table 3 gives the procurement prices of paddy and wheat during the period 1976—1982.

TABLE—3

Procurement Price of Wheat and Paddy (1976 – 1982) Marketing Year*

(Rupees per Qunital)

Commodities	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
Wheat	105	110	112 50	115	117	130**
Paddy	74	77	85	95	105	115**

Source : Government of India, *Economic Survey*, 1981-82, p 31

*Marketing year April-March for wheat, and November—October for paddy

**Rs 119 for fine variety and Rs. 123 for super-fine variety

Low procurement price

Though the rationale for adopting such a procurement price policy is appreciated in context of providing minimum profit margin to producer and ensuring the supply of such goods at reasonable price to consumer under Public Distribution System and though these prices have been revised from time to time to compensate the producer for rise in production cost, admittedly the fact is that the procurement price is too low to induce the producer to sell voluntarily his marketable surplus to the public procurement agencies. It acts as a major constraints to which the procurement operation is subject. Compulsory levy is resorted to but this method has its own limitation.

Inefficient transportation

Transport bottleneck is yet another factor affecting adversely the efficient conduct of the procurement operation. Huge amount of wheat, for example, has to be transported from the rural areas to the place where storage facilities are available during a short period, April—June. This calls for adequate development of road and road transport in rural areas, a goal which is yet to be realised fully. Further, wheat and rice procured in the food surplus States have to be transported to the food deficit States, a process which is slowed down when Railways fail to cope with the rising demand for their services.

Inadequate storage

Storage facilities are yet inadequately developed but are necessary not only for the success of public distribution operation but the public procurement efforts too. Goods procured must be scientifically stored by the agencies engaged in procurement of wheat and rice to prevent them from deteriorating in quality or being wasted till they are supplied to the distributing agencies. In order to reduce the cost of transportation from the place of procurement to the place of consumption of goods it would be necessary to build up the requisite storage facility at places where both procurement and public distribution points are located or at places of minimum transport cost between the two points.

In order to enlarge the volume of procurement of wheat and rice, their production must be augmented. This, of course, would call for the implementation of the various short-term and long-term measures which are stressed in our Plan to increase productivity and production in agricultural sector. □

...and be a potential price control mechanism!

R. K. Parashar

The author here examines the evaluation report on essential supplies programme and public distribution system in India by the Programme Evaluation Organisation of the Planning Commission. He says in view of the plan growth with stability, the implementation of various suggestions made in the report and removal of the deficiencies pointed out will go a long way in improving both the efficacy and efficiency of the public distribution system and making it a potential mechanism to control prices and inflation.

THE PUBLIC DISTRIBUTION SYSTEM refers to the set up under which certain specified commodities of everyday use are procured and made available to consumers through a net-work of fair price shops in urban as well as rural areas. Seeing India's size and population, it is an operation of complex and gigantic dimensions requiring the continued working of several coordinates simultaneously with perfect understanding and timeliness. The main coordinates of an efficient public distribution system are production, procurement, transportation, storage and distribution of selected commodities. Any weak link in the chain could throw the system out of gear.

Stabilising prices

The Sixth Five Year Plan put great emphasis on growth with stability. The Plan document noted that for a successful implementation of Plan it is crucial to control inflation and generate stable price expectations. It observed that for maintaining stable price conditions an efficient management of the supplies of essential consumer goods was of decisive importance. The demand for such commodities being largely inelastic, even a marginal fall in their output and availability often triggers a disproportionate increase in prices. Further, as most of these commodities are agriculture based, their prices are subject to large seasonal variations. Therefore, while efforts have to be geared to increase the production and availability of these commodities, their public distribution has a major role to play in ensuring that these essential consumer goods of mass consumption become available to people at reasonable prices.

Thrust under 20-Pint Programme

In order to promote social justice and economic growth with speed and urgency, the then Prime Minister announced a New 20-Point Programme in January, 1982. This programme was dovetailed into the overall plan of development. It pinpointed areas of special thrust which will show immediate tangible results for various segments of the population, more specially its weaker sections, viz., the rural poor and the underprivileged groups in urban areas. Point No. 17 of the New 20-Point Programme sought to "expand the public distribution system through more fair price shops, including mobile shops in far-flung areas and shops to cater to industrial workers, students' hostels, and make available to students text-books and exercise books on

The views expressed herein are those of the author

a priority basis and to promote a strong consumer protection movement." As a result, State Programmes were broken up into District 20-Point Programmes. To monitor the progress of the Programme in different States and to provide a quick assessment of it, the Planning Commission set up a regular cell as one of its Divisions. Also, within months of the launching of the New 20-Point Programme, it asked the Programme Evaluation Organisation to evaluate its Point No. 17, viz., the Essential Supplies Programme.

The Programme Evaluation Organisation (PEO) studied the working of the Essential Supplies Programme and the public distribution system in 18 out of 22 States of the Indian Union; the four States which could not be included in the study were Sikkim, Assam, Meghalaya and Nagaland. The data for the study was collected at four levels, viz., at the level of (i) beneficiary households (rationcard holders), (ii) fair price shops, (iii) districts, and (iv) States. For purposes of the study in all 1325 rationcard holders (660 from urban and 665 from rural areas) 265 fair price shops (132 from district town and 133 from villages) were selected and 33 senior most officers at the district level from as many selected districts and 18 officers at the State level from as many selected States incharge of the Civil Supplies Department were contacted and their views on the working of the programme, problems encountered in its execution, and suggestions they had to offer on relevant aspects, were elicited. The data was collected with reference to three points of time—December, 1980, December 1981 and October 1982, i.e. for the year preceding and the 10 month following the announcement of the New 20-Point Programme. The PEO's Report, which has already been made public apart from dealing with the general working of the essential supplies and public distribution programmes, touches upon some of the main features of the distribution mechanism, commodity coverage, the financing and profitability of fair price shops and the difficulties and problems faced by consumers and fair price shopkeepers and sets forth a number of findings and recommendations.

PEO findings

Out of some 20 and odd number of commodities distributed through the public distribution system in different States, the commodity coverage of the 265 fair price shops studied revealed that there were only nine commodities which were made available by 17 per cent or more of the shopkeepers. Of these sugar was being distributed by over 92 per cent of the shopkeepers, rice by about 80 per cent, wheat 67 per cent, kerosene 53 per cent, palm oil 52 per cent, and suji, maida, rapeseed oil and wheat floor by about 17 to 19 per cent of them. Besides these nine commodities, controlled cloth was distributed by 11.36 per cent and exercise books by 5.68 per cent of the total number of the shopkeepers studied.

The study found that low income group households, i.e., households with monthly income of Rs. 600 or less, comprised over 72 per cent of a total of 1325 sample beneficiary households canvassed. In rural areas they constituted over 84 per cent of the sample. The income distribution aspect, the selected households, and the presence of a sufficiently high proportion of households of vulnerable sections of the population in the total sample, indicates that the benefits of the Essential Supplies Programme were being reached, through the public distribution system, to the vulnerable sections of the population in an ample measure and, therefore, one of the cardinal objectives of the public distribution programme, namely, that of adequately covering the poorer sections of the population, especially in rural areas, was being adequately fulfilled.

Among the beneficiary households in urban areas, the two predominant occupational categories were services (34.66 per cent) and industrial workers (13.59 per cent), followed by non-agricultural labourers and petty shopkeepers (7.33 per cent each), mainly commerce and trade (16.41 per cent) and artisan|households industry (6.11 per cent). In the case of rural households the two main occupational categories were mainly cultivators (38.96 per cent) and agricultural labourers (18.21 per cent). The two other categories next in importance were non-agricultural labourers (10.60 per cent) and services (9.85 per cent).

Non-lifting of quotas

The study found that there was a high incidence of not lifting of sanctioned quotas of different commodities by the shopkeepers studied. This incidence was observed to be higher in rural as compared to urban areas in the case of almost all the commodities. This was higher in rural areas even in the case of sugar for which the incidence of not lifting was in the overall observed to be low. 'Poor quality', mainly in the case of wheat and rice, and, therefore, the poor off-take of these cereals from fair price shops by beneficiary households, especially in the urban areas, emerged as the main reason for the not lifting of the sanctioned quotas of these two cereals by shopkeepers. 'Easy availability in the market' of several of the commodities, e.g., rapeseed oil, wheat floor, palm oil, rice and wheat (in that order), was the second reason, in the order of importance, given by shopkeepers for non-lifting of these commodities especially in rural areas.

Sanction v. allotment

Another very important finding of the Report is regarding the quantities of commodities sanctioned and allotted for distribution by the Government,

lifted and finally made available through fair price shops by the shopkeepers. In the case of all the 11 commodities studied, except controlled cloth and wheat flour, often enough the quantity sanctioned was not the quantity allotted and the quantity lifted also did not correspond to the quantity sold. Every onward linkage led to diminution in the quantities of the commodities. In the case of five commodities, viz., wheat, rice, suji, maida and exercise books, the quantities sold through fair price shops were broadly 33 to 50 per cent less than their quantities (quotas) sanctioned for release. In other words, between 33 to 50 per cent of the quantity of these commodities was carried as stock extra to the distributional requirement|offtake at given point of time.

The above mentioned finding has far-reaching implications. If on further investigation Government finds that it is carrying substantial quantities of stock extra to the requirement for the public distribution system at a given point of time (besides the buffer stock quantities), substantial quantities of money resources, godown facilities, etc., would be released by reducing its operational stocks or alternatively it could cover proportionately more population, or increase the per unit norm of supply.

The study also reveals that about 76 per cent of the shopkeepers studied said that the running of fair price shops was not profitable. They gave multiple reasons for this. About 93 per cent gave low rate of commission as the single most important reason, followed by high cost of overheads (38 46 per cent), underweighing at the warehouse supply points (25 13 per cent) and poor quality of commodities supplied leading to unsold stocks (13.85 per cent). Keeping this in view the Report has recommended for fully ascertaining the financial viability of those given licences to run fair price shops before the granting of a licence and thereafter periodical checking of it; developing a system of according credit to a limited extent to the fair price shopkeepers; and critically examining and reviewing, from time to time, the whole structure of commission—direct commission as well as indirect revenue through the sale of gunny bags, etc.—allowed to fair price shopkeeper on the sale of different commodities.

The Report has also brought out that some of the major difficulties faced by the fair price shopkeepers were also the difficulties faced by beneficiary households, e.g., irregular availability of certain commodities, their inadequate supplies, poor quality and under-weighment at the time of supply.

Another important finding of the Report pertains to the extent of existence of the consumer protection movement. In eight out of the 18 States taken up for this Study, not a single respondent, whether urban or rural, reported the existence of a consumer protection movement in his area. Barring a few States, consumer protection movement had not made any considerable headway in the 18 States taken up for this study.

The study also found that the administrative machinery for the implementation of the programme was, by and large, adequate and effective. However, while the coverage of the rural areas, in terms of the number of retail outlets vis-a-vis the population to be served, comes out to be significant, in the matter of specifically catering to the needs of industrial workers and of those living in remote and far-flung areas, the efforts made were deficient. Similarly, whereas the identification of students' hostels and meeting their requirements on a general basis progressed fairly well, the work relating to the identification of students and of adopting concrete steps to fix the prices of text books, reducing heir sizes and the supply of exercise books was inadequate.

Scope for improvement

Overall, the weaknesses and deficiencies of the public distribution system, the study reveals, did not consist in either the lack of sufficient coverage or want of necessary administrative machinery but in certain inadequacies in its operational aspects and the degree of coordination required which provide scope for further improvement.

To overcome the inadequacies in the operational aspects of the public distribution system and for improving its efficiency and performance, the study has made a number of useful recommendations. It has, inter alia, recommended that the benefits of the element of subsidy in the public distribution programme should flow in its entirety to the poor. This would suggest a kind of a dual pricing policy in respect of all commodities made available through fair price shops. For working out the total requirements of different essential commodities needed to be stocked at the apex level for purposes of public distribution, the study has recommended, that Government may like to use the magnitude indicator of beneficiaries, vis-a-vis different commodities, who do not regularly obtain their requirements of these commodities from fair price shops. In order to ensure that the commodities made available through fair price shops are of good quality, clean and free from all foreign matter, it would be desirable if wheat and rice, which are the stable items of food all over the country, are sold at fair price shops in 5, 10 and 20 kilogram bags, neatly stitched and certified as to the quality of the contents.

To sum up, the adoption of the various suggestions made in the Report and the removal of the deficiencies brought out would mean a distinct enhancement of both the efficacy and efficiency of the public distribution system. □

Food saved is food produced !

C. N. N. Murthy

In our country 10 per cent of the total foodgrain produced is wasted due to poor storage. Safe storage is very important and a necessary step after good production. Foodgrain is stored in containers made from timber, hessian, mud, bamboo and metal. The containers for storage should be not only pest proof, but moisture proof also. Indian Grain Storage Institute has evolved five rules of safe storage.

MAN HAS BEEN STORING GRAIN for a long time. Archaeologists have found that storage began about 8000 B C. in the Neolithic period of the Stone Age when man began to cultivate plant and raise domesticated animals. The need for a reserve food supply to alleviate hunger at a future date must have been as much a concern in the pre-historic era as it is now. Over the last 10,000 years man has learned, mostly by trial and error, that dry grain can be stored for long periods if it is protected from the invasion of pests.

In Indian insects, rats, birds, mites, fungus, moisture cause foodgrain loss of about 10 per cent. Moisture alone causes 0.68 per cent loss. Grain that lies wet will sprout and waste and such foodgrains are unfit for eating.

Different storage structures

Our farmers retain 70 per cent of the foodgrains for feed, food, fedder, sale or barter at their level and store in traditional ways. Imagine, about 82 per cent of grain harvested is stored in traditional storage structures. Bamboo, timber, paddy straw, mud, earthen pot, metal hessian cloth are used as storage structures. But this type of storing is not scientific and foodgrains are exposed to loss-causing agents. The bamboo indoor structures used in Andhra Pradesh, Tamil Nadu, Assam, Orissa, Maharashtra and Karnataka can hold 5 to 20 quintals of paddy and the cost varies from twenty to fortyfive rupees depending upon capacity. Consider 'duli' of Assam, it is usually placed on a low raised platform. It is neither air tight nor moisture proof. Topa or Tom of Assam, another traditional device made of bamboo and mud straw are hung from the roof inside the house to protect foodgrains from rats and moisture.

The outdoor storage structures of bamboo built on raised platform is known as 'borem' in Andhra Pradesh. It is common in Krishna and Nelgonda districts of Andhra Pradesh. In Tamil Nadu, it is 'kudir' which is commonly used in Trichinapalli District. In West Bengal, it is known as 'gola'. The capacity of these structures varies from two to twenty-five tonnes. It costs from 20 to 300 rupees to construct. Mud plastered on the structure is likely to get washed off by rain and the grain is likely to be damaged. Another version is 'bukhari', an outdoor cylindrical storage structure seen in Central and Eastern regions such as parts of Bengal, Bihar, Delhi, Punjab, Rajasthan and Uttar Pradesh. 'Patan' of Maharashtra and 'Gai' of Tamil Nadu are similar to 'Bukhari'. In Bihar, this is used for storing seed grain, pulses and wheat. 'Bukhari' is also used to store cattle fodder. It lifespan is six to ten years. But it is not moisture proof either.

Then comes to timber structures. These are called as 'Guti bharal' in Assam 'Pathayam' in Kerala 'Peti' in Uttar Pradesh. Generally unthrashed paddy is stored in them. They are likely to be demaged by rats, moisture and termites.

The Paddy straw structures are 'Mora' in North Bihar, 'Morai' in West Bengal, 'Oliya' in Orissa, 'Puri' in Andhra Pradesh and 'Kacheri' in Karnataka. They are made of paddy straw alone or paddy straw mixed with mud. The cost of erecting such structure is about five to ten rupees depending upon the capacity. The disadvantage with it is that it is not moisture proof and therefore, paddy stored in this needs to be taken out before monsoon. These are all above-the-ground storage structures.

The underground store structure is very simple, cheap and offers protection against pilferage, pest attack and adverse temperature variation. It is known as 'Pathra' in Andhra Pradesh, 'Banda' in Maharashtra, 'Pev' in Tamil Nadu and Karnataka, 'Khani' in Orissa, 'khani or banda' in Rajasthan, 'khatti' in Uttar Pradesh and Punjab, 'banda or 'katti' in Madhya Pradesh. It storage capacity is upto sixty tonnes. The main problem in it is that the grain gets damaged because water penetrates through its walls and floor as these are not impervious.

Other mud structures like 'Kachha kothi' are quite common in Bihar, Punjab, Uttar Pradesh and Madhya Pradesh. They are indoor structures, usually circular and are of two to five quintals capacity. They are made of clay mixed with wheat straw, paddy straw or husk. They are used for storing rice, pulses and wheat and are quite common in South Bihar. Since the material used in it is cheap the cost of such construction varies from ten to forty rupees for five quintal 'kothi'. Unfortunately, it is not moisture proof. According to an estimate the grain loss in it is four to nineteen per cent.

In Punjab and Uttar Pradesh, small capacity indoor earthen pots are also used to store foodgrains. It is similar to 'Jhala' or 'Mutka' which is generally used to store water. 'Bhauri or Kunda' is the Bihar version of the earthen pot. This also is not moisture proof and, therefore, the grain may get damaged by insects and fungus.

Then it is the 'Thekha' of Rajasthan and Uttar Pradesh. It has a metal base at the bottom and hessian cloth container at the top. It can hold eight to ten quintals of foodgrain. Since it is made of hessian cloth it is not air tight nor moisture proof. These traditional storage structures are desperate attempt by farmers to safeguard their produce. These are in no way perfect to avoid grain damage. The Hindi proverb "garibi me atta gila" summarises the plight of farmers whose produce is exposed to rain.

Indian Grain Storage Institute

During the last few years the problem of storage of agricultural produce particularly the foodgrain has assumed added importance due to marked rise in production in general and wheat and rice in particular. By now, it is well recognised that the elimination of losses during storage at farmer's and trader's levels will mean increased availability of foodgrains. Needless to say that the grain produced at high cost must be protected from losses caused by various factors so as to minimise the burden of importing foodgrains, on the one hand, and to supply quality foodgrains, to the people on the other. The Indian Grain Storage Institute (GSI) which was established in 1968 with the collaboration of United Nations Development Programme is actually a development of Grain Storage Research & Training Centre. It was established by the Department of Food at Hapur in 1958. The field stations of the Indian Grain Storage Institute are located at Ludhiana in Punjab, Hyderabad in Andhra Pradesh, Jabalpur in Madhya Pradesh, Udaipur in Rajasthan and Jorhat in Assam which are wheat, paddy, pulses and oil seeds and small millets growing regions of the country.

The main aim of the Institute is to reduce the losses of foodgrains by development of modernised grain storage practices for the farmers traders, co-operatives and large scale storage of foodgrains in the country and also to evolve the methodology to be adopted by the Save Grain Campaign (SGC). The main objectives of the Institute are :—

To develop code of practices for proper grain storage and handling and to investigate the nature, extent and degree of losses under different agro-climatic conditions.

It will also develop improved type of storage structures, grain driers, grain handling, cleaning and grading equipment besides improvement in the traditional storage structures|equipment using locally available materials.

The Institute is already trying to develop improved rodent and insect control techniques and storage methods on the farms as well as commercial depots. Besides producing popular literature the Institute will hold nation wide demonstration camps for farmers, cooperatives and other grain handling organisations.

The devices developed

The Institute has already designed and developed about 30 indoor and outdoor storage structures for safe storage of foodgrains. Moreover, they have suggested improvements of the traditional storage structures so that the foodgrain losses are reduced. Mention may be made of metal bins and pucca kothis devised by the institute which have found favour with the farmers. In fact, it is a pleasant sight to see that during the marriages such a metal bin is gifted these days to a bride in the villages around Hapur.

As it is, the Research and Development spin offs which are tested in the model villages of the Institute are taken up by the sister organisation S.G.C. which has its Headquarters in the Department of Food with 14 Field offices at Ahmedabad, Bangalore,

(Continued on page 23)

Investment allowance should continue

Under the long term fiscal policy, the rates of corporate taxation will not be reduced further. However, the surcharge and surtax will be abolished with effect from the assessment year commencing from April 1, 1987. The new policy also intends to withdraw "investment allowance" on the ground that it has created distortions in the profitability of companies. But it is not correct. The investment allowance has proved to be an effective fiscal incentive for accelerating capital formation in the country over the years. The withdrawal of investment allowance will impede the growth of industries, particularly the ones which require sophisticated technology. Besides, abolition of investment allowance and introducing a new concession by way of allowing a deduction of 20 per cent of the taxable profit as exemption from corporate taxes will not only bring a large number of the big companies into the tax net but also reduce the funds available with these units for their future investments. The Government should, therefore, have a fresh look at the proposed corporate tax reforms and retain incentives like 'investment allowance" in the interest of accelerating the pace of industrial growth.

New savings scheme

In new fiscal policy, the Government is considering a proposal to strengthen saving incentives by introducing a new investment scheme to be designated as the National Deposit Scheme (New Series) in place of the present national deposit Scheme Deposits under the new savings Scheme will be eligible for deduction from taxable income to the extent of 50 per cent of the net deposits made in the year. Deposits under the Scheme will carry interest at the rate of 10 per cent per annum but interest will not be eligible for the concession now available to interest on bank deposits under section 80H of the income-tax Act. The Government claim that the Scheme is a step towards the "expenditure tax" concept The Wanchoo Committee also suggested in its report that "Tax on expenditure should be reintroduced as a measure to fight tax-evasion We are not unaware that a tax on personal expenditure has certain distinct advantages specially to a country like India because it is likely to promote savings which are so vital for the country's economic devcopment". [The Final Report of DTEC (Wanchoo Committee) 1971 Chapter III]. The Finance Ministry has rightly made it clear that investors in this scheme will have to establish the source of income Thus, the scheme in no way will help the conversion of black money into white. This is a step in the right direction. It is our past experience that Voluntary Disclosure Scheme could not bring desired results. The Bearer Bond Scheme also failed to net even Rs 1000 crores The Wanchoo Committee had already opposed such schemes as they give an impression that Government is not competent to contain the operation of black money. Voluntary schemes to unearth black money are also criticised on the ground that they give premium on fraud and tax-evasion. While they are unfair to the honest tax-payers.

Arrest inflation

Since Indian economy is in the grip of inflationary pressures, non-plan revenue expenditure of the Government is also adding fuel to it. The new fiscal policy should contain it. Basically, while current revenue (tax and non-tax) have stagnated around 10.5 per cent of GDP. since the mid-1970, non-plan revenue expenditures have grown from about 8 per cent in the first half of 1970 to nearly 11 per cent in 1984-85. In recent years nearly 70 per cent of non-plan revenue expenditures have been on four items, defence, interest payment, food subsidies and fertilizer subsidies.

Non-Plan Revenue Expenditure (1971-72 to 1984 85)

(As per cent of GDP)

Items	Average 1971-76	Average 1976-80	Average 1980-85	Average 1984-85 (Revised)
1 Defence	8.1	9.3	9.8	10.9
2. Interest payments	3.2	3.1	3.2	3.3
3 Food subsidy	0.3	0.6	0.5	0.5
4 Fertilizer subsidy	n.a	0.3	0.5	0.8
5 All others	3.0	3.4	3.1	3.3

The above table high-lights the growth of non-plan expenditures over the years. It is increasing inflationary pressures in the economy It has to be contained. So far as defence is concerned, there can be no compromise with the imperatives of national security. However, efforts must be made to make it more cost effective. The growth of interest payments is directly linked to the increasing reliance on borrowing for financing public investments. The solution to this problem lies in reducing our reliance on borrowings by increasing the BCR (Balance of Current Revenue) and internal resources generation by public sector undertakings. The other major constituent of non-plan revenue expenditures is "subsidy", particularly on account of food and fertilizers. There is scope for reducing the scale of food subsidies.

Thus long term fiscal policy as understood, should provide necessary imperatives for strengthening the growth momentum in the Seventh Plan so that we can effectively tackle the deep seated problems of poverty and un-employment in our country. It is indisputable that our economy is in the grip of inflationary pressures and in times of inflation all kind of conflicting effects follow from whatever, fiscal policy is adopted. Hence, given the constraints of resources, a system of checks and balances has to be carefully devised to meet any situation. □□

Towards the 21st Century
High-tech, Advanced knowledge
Computerised Controls, Space Odysseys
Scouring Oceanbeds, Searching the Antarctic—
It's all sea-change that awaits us
at every turn.
Prepare we must, right from now.
Lest we miss the revolution in the offing.
Science and Industry overcome we shall
the problems of poverty
And forge ahead together

The Japanese miracle

(Part I)

Shibdas Burman

Japan, whose people claim mystic origin from the Sun, carried fire from the ashes of the Second World War, and rose to become the envy of the world. The author tries to understand the miracle behind her success. He traces the origin and the development of her industrial policy against the backdrop of events happening since 1853 when modern Japan was born after many years of feudal isolation during the Tokugawa period.

THE MODERN PERIOD OF JAPAN started on that day in 1853, when, after 215 years of deliberate feudal isolation during the Tokugawa period, Commodore Matthew Perry's steam frigate Susquehanna landed on her coast. Japan signed a series of coerced treaties with five nations from 1854 to 1858. As a result of these unequal treaties, Japan's customs duties were unilaterally lowered to 5 per cent. The duties in the United States at the time exceeded 30 per cent. Japan was a backward nation at that time. But she did not follow the Ricardian, that is, free market economic management on the basis of customs duties of 5 per cent That is why it avoided the fate of nineteenth-century India The alien rule in India brought her into the free-trade system of Britain. The world famous cotton goods industry in the country was destroyed. Britain forced India to specialise in the production of raw cotton and sell it to Britain. The Lancashire mills produced cotton goods which were then exported to India

Meiji-era (enlightened rule) Japan refused to share the *kismat* (fate) of India. There was an upsurge of nationalism in Japan which led her to aspire to build modern "black ships" of the sort used by Matthew Perry. At that time United States had adopted the policy of protectionism to let her infant industries grow. The policy of high tariffs on imported industrial products from Britain allowed the United States to build up its industries. But it was impossible for Japan to follow such policies in view of the unequal trade treaties in vogue then coming on the way The Japanese government had no alternative but to adopt policies to foster national industries.

The views expressed herein are those of the author

Industrial policy

As Amaya Naohira says herein lie the roots of Japan's industrial policy. "By choosing to reject India's fate at a time when Japan's own private-sector industry was still embryonic, the government was obliged to play a large and ever-increasing role in management of the economy Thus it was that at the beginning of the Meiji era the government vigorously promoted government enterprises, thereby adopting actively interventionist economic management policies that were very close to the Stalinist (that is, the state control of economy) model Once it had achieved victory in the Russo-Japanese War of 1904-05, the government gradually switched to policies that gave the initiative to private enterprise." (Japan Echo, v 10, n. 4, 1983)

Continuing further, Amaya Naohiro traces the later developments Japan could not continue to develop along the lines stated above, because World War I intervened, followed by the Great Kanto earthquake of 1923 and then the Great Depression that began in the United States in 1929 From then until her defeat in 1945, the country's economic management grew increasingly Stalinist in style.

The industrial policy shifted direction with 1960 as the watershed year, the shift towards the Ricardian economy started. The industrial policy followed in the 1960s, writes Amaya Naohiro, aimed to make Japanese industry self-supporting through the

process of liberalising capital transactions and trade "The objective was to incorporate Japan's economy into the international economic system by deregulating the economy, discarding exclusionist policies, and arising the international competitiveness of Japan's manufacturing industries."

The incentives

To achieve these objectives the MITI (the Ministry of International Trade and Industry) provided a certain amount of support through the low-interest loans, tax incentives, and R & D subsidies. Subsidies are heavily utilized in Japan's agricultural policy, but in industrial policy according to Amaya Naohiro, they are more a sweetener than anything else. Several authors have written that the success of industrial policy in Japan depends on MITI's power of persuasion when dealing with private enterprise. The secret behind the success of Japan's industrial policy is the effort expended by MITI on creating a consensus between the government and private enterprise and between companies through exchanges of information. An oft-quoted example of success by MITI is the programme to develop very large-scale integrated (VLSI) circuits. In this case both the five companies involved and MITI were aware that semiconductors were a vital industry for the nation as well as for themselves.

The industrial policy of Japan led by MITI is called a "planned market economy" by Prof. Yuuya Ueno and he describes it as follows .

> "Under this planned market economy, the government, especially MITI, indicates its thinking with regard to how to lead industries and designate strategic ones after discussions and negotiations with all parties concerned. This gives related industries some idea of the future and consequently leads private sector economic activities in a desirable direction This system is not dependent on strong government controls but more relies on companies' autonomy, using the organisation of a free market economy However, while it formally recognizes the independence of private sector enterprises, the government can intervene in the market economy, if necessary.
>
> Japan's industrial policy is designed to plan and alter industrial structure through interaction between the govt. and the private sector, intervention and competition, and stimulation and reaction. In this respect, it is different from the free enterprise economy in the U.S., the centrally planned economies in the USSR and East European countries, and the system in the U K and Italy where national enterprises or government-controlled enterprises compete with each other. Japan's system is called the Government-private cooperation system or the cooperation of the three—Government, industry and the financial sector. It is often criticised abroad as "Japan Incorporated", a compound of government and industries (Keizaigaku-daijiten I, page 668, Toyokeizai Shimposha). (Isamu Miyazaki, IFCI Silver Jubilee Memorial Lecture, 18 December 1984, New Delhi).

Public plus private

Prof. Ezra Vogel lists the following reasons for which the private sector voluntarily cooperates with MITI :

(1) MITI's endeavour with respect to industrial development of each field are appreciated by the private sector firms.

(2) MITI provides superior information and analyses.

(3) MITI officials and company executives are in constant communications formally as well as informally.

(4) When MITI agrees to requests by companies, it gives priority to those who have been cooperative.

(5) MITI generally works in harmony with the consensus of the private sector as a whole.

While heavy and chemical industrialization contributed towards the growth of the Japanese economy, Prof. Isamu Miyazaki notes that not all the Industrial policies proved successful as witnessed by the blunders committed in protecting and nurturing some specific industries, such as textiles and oil refining. In the case of the textile (cotton fiber) industry the quota system for raw cotton and the MITI's intervention in regard to plant and equipment investments resulted in overcapacity which was subsequently painfully eliminated. In the case of oil refineries, excessive government intervention also resulted in excessive investment and a consequent deterioration in the earnings position of oil refiners. MITI was especially shortsighted in giving some Japanese oil companies special priority in the issue of government permits and validations for equipment investments in order to beat major multi-national oil companies, thereby widening the gap between oil-refining capacity and marketing ability.

Coal is also a case of failure of Japan's industrial policy. Amaya Naohiro opines that Japan's coal policy resembles its agricultural policy in that, under government pressure, the coal industry was overprotected at the expense of the general public.

Knowledge intensive era

The year 1964 saw the birth of the Industrial Structure Council (ISC) of MITI, a body consisting

of MITI officials and top business leaders. This body plans where Japan should go economically over the next 10 to 30 years; it decides in which the key frontier industries to achieve the goal and announces its plans. In 1971, the ISC announced its "Vision of Industrial Policies in the 1970s", in which it recommended Japan to move into the "knowledge-intensive" era of technology-based industry, fine chemicals including pharmaceuticals, computers, semiconductors, aircraft, nuclear and fusion power, biotechnologies like genetics and photosynthesis, industrial robots, communication equipment, numerical control machine tools, and new materials such as ceramics for car engines, etc. It was specified that it would be impossible for Japan to make such a change without the industrialization of the developing countries. This is so as the population of the North is too small to permit the division of labour required by the economy in the 21st century. Japan's crucial aid to the Korean industrialization process followed the issuance of this report.

The purpose of high technology in Japan is to revolutionize heavy industry. When U.S. firms planned to scrap energy-intensive steel, the Japanese firms moved to continuous casting and other energy-saving devices. Basic steel is being maintained through heavy investment in productivity and resource efficiency. Although, textiles have declined as a portion of production, the absolute production of textiles has increased through modernization (Executive Intelligence Review, Aug. 16, 1983).

Current industrial policies

Prof. Isamu Miyazaki states that the government is currently focussing industrial policy obectives on two areas : structurally-depressed (declining) industries and new growth industries.

The oil crisis in late 1973 gave rise to certain structural problems in manufacturing industries like, petrochemicals, aluminium smelting, chemical fibers, pulp-paper and steel making. Through enacting law in 1978 designed to dispose of excess capacity primarily through voluntary endeavours by the industry, Japan resolved the problem. The second oil shock in 1979 posed structural problems for basic materials industries consuming massive amounts of energy. To meet the situation the country enacted law in 1983, some of the primary aims of which are the following :—

(a) to minimise those sectors of industry which have lost their economic viability,

(b) to lower production costs, to increase higher value-added production, technological innovation, further industrial consolidation, etc.

(c) to minimise any adverse impact on employment, etc.

Since the government wants the realisation of these objectives by the effort of industry itself, the government assistance is limited to (a) tax treatments, (b) assistance through the Japan Development Bank, and (c) subsidies for technological improvement in energy-substitution and the development of energy source other than petroleum.

The Japanese government assistance is provided in case of development of new growth industries, a typical example of which is the development of aircraft engineering. Such assistance is provided in fields where the risks of innovation are great or a long time lag is involved in the realisation of new technology. Such assistance is further provided for cases where the effect of the new industries on socio-economic level is great. The total expenditure on the development of VISI project during fiscal 1976 to 1979 was 58 billion yen, of which the government allocation was 29 billion yen.

Rising income

How Japan has progressed in its march to prosperity can be seen from the following figures. The figures quoted are from R Summers and A. Heston, "Review of Income and Wealth", June 1984. Assume that per capita income in US is 100 in 1950 and in 1981 The corresponding figures for Japan, Germany, France and the United Kingdom are given in Table 1.

	1950	1981
United States	100	100
Japan	17	71
Germany	40	83
France	47	81
United Kingdom	56	63

Table 1. Narrowing the Income Gap.

Japan's rise from the ashes of the second world war was possible for many reasons, amongst them being their intense love of the country which the Japanese believe had a mystic origin from the sun. The disciplined workforce, the seniority-based wages, the lifetime employment policy, the concept of quality circle and the just-in-time inventory system, have been the factors behind her present prosperity. The "three crown jewels" of Japanese management—lifetime employment, promotions and salaries based on seniority and the company-run labour unions—all of these, says Masaya Miyoshi of the Japan Federation of Economic Organisations, "generates dynamism, motivation and a strong sense of belonging". Writing in 'Newsweek,' July 2, 1984 Michael R. Meyer and others state that there is now a wave of revisionist thinking and the picture painted by Miyoshi may be changing. A 1983 Gallup poll sponsored by the Japanese government found that the workers in the country are less relaxed and less satisfied with their jobs than the American and European

workers. The journalist Satoshi Kamata opines that in America the quality-control movement aims only to eliminate product defect, but "in Japan it's a mechanism for thought control."

Commenting on the working conditions at a Toyota plant Kamata in the recent book, "Japan in the Passing Lane", writes that Japanese companies deliberately exploit their workers' instinct for group behavior in order to enforce rigid production schedules, often these involve great personal sacrifices. Michael R Meyer *et. al.* write that in some auto companies the pressures to confirm are so intense that workers are afraid to file accident reports when they are injured, since that might reflect badly on their production group or their supervisor. The sharp rise of divorce and suicide rates are pointers showing that some cracks in Japan's famous management ethic are beginning to appear.

(to be continued)

Production of Kerosene in 1985-86

The total estimated requirement of kerosene in the country during 1985-86 is 6.69 million tonnes. The indigenous production of kerosene during the same period is estimated at Rs. 4.16 million tonnes.

Kerosene is being imported under term contract with from the USSR and by spot-purchase in the international market.

Steps are being taken to increase production indigenously and save foreign exchange in the imports during the Seventh Plan period. These are (i) to increase the refining and processing capacities of the refineries (ii) use of thermally efficient kerosene stoves and (iii) encouraging alternative fuels to cut consumption, of kerosene oil.□

Indira Gandhi Himalayan Environment Institute

An allocation of Rs. 3 crore has been provided for the Indira Gandhi Institute of Himalayan Environment and Development during the Seventh Five Year Plan. The allocation during the current year is Rs. 50.00 lakhs.

The institute will have a decentralised structure with units located in the existing universities|research institutions. These include Garhwal University, Srinagar, Uttar Pradesh Central Building Research Institute, Roorkee; Kumaon University, Nainital, North Eastern Hill University; Shillong, Himachal Pradesh Agriculture University; Solan; Jammu University, Jammu and Kashmir University, Srinagar.

In addition, the main Institute is proposed to be set up in District Almorah, Uttar Pradesh.

Liberalise trade for economic growth

IN A SEMINAR on trade liberalisation policy held in New Delhi recently under the chairmanship of Deputy Chairman, Planning Commission, Dr. Man Mohan Singh, the World Bank representative Dr. (Mrs.) Kruiger discussed the merits of trade liberalisation policy in the context of developing countries in the present world economic situation. She enlisted three reasons for trade liberalisation namely, changes of a regime, balance of payment crisis and the political will.

According to Dr. Kruiger, under the liberalised trade policy, industrial production provided a competitive market. She cited the recovery of Turkey after 1979 crisis following its trade liberalisation policy. She also gave examples of Spain, Finland, Brazil, Argentina and Chille and how these countries staved off their economic crisis through liberalisation of trade policy.

She explained various outcome of trade literalisation policy and said it needed continuous adjustment in the exchange rate, moving towards qualitative control of export and import rather than quantitative method and a sound monetary policy It also meant more incentive to exports and import freedom for exports.

She said that liberalisation of trade led to liberalisation of industrial sector, which would be reflected in the changes of economic structure where country would pass through different stages of development. Under the liberalised trade policy, the planners would play an important role in making physical planning to adjust the process of development. She said the scale of liberalisation depended on the stage of economic development that a country achieved. Conflict arose between domestically produced and importation. It was here that planners would have to decide without delays. For delays would increase the cost of planning.

Dr Kruiger also explained how under the restrictive trade policy the premium on domestic products went up in domestic market and it often led to import substitution. With this, more and more insufficiency crept in the economy thus hampering rapid growth of nation, she added.

—Yojana Correspondent.

(*Continued from Page* 9)

dities at reasonable price, stability can be achieved not merely by efforts of the government alone but by the cooperation of the voluntary consumers' organisations also. The voluntary consumers' movement therefore has to be strengthened and encouraged to act as a countervailing force in the country. Indeed urgent steps are needed for establishing Consumers' Advisory Councils in the states for promoting consumers' movement in the country for proper and timely provision of essential commodities at fair prices.

(Courtesy : Spotlight, AIR)

The Spiti valley hydel project

G. S. Randhawa

THE PEOPLE OF SPITI VALLEY, forming a part of the Lahaul and Spiti District of Himachal Pradesh bordering Tibet are watching history being created amidst them. More than fourteen hundred workers and engineers of the Himachal Pradesh State Electricity Board are perspiring in the subzero temperature to execute the world's highest hydro electric project. This is perhaps one of the most difficult regions in the world. The work on the project started in 1976 and it is likely to be commissioned in September, 1986. The Project on commissioning will transform the economy and life of the rugged tribal people. The entire Spiti Valley is without any vegetation.

The hills denuded of all natural cover bear witness to the uncontrolled erosion over the centuries turning the whole valley into a high altitude cold desert. The valley receives heavy snowfall during the winter but the monsoons are totally dry because it rains rarely. There is lack of oxygen in the atmosphere because of the absence of vegetation and the high altitude. Not much of exertion is possible in such an atmosphere and it leads to complications like breathlessness, loss of appetite, sleeplessness and high altitude sickness. Moreover, seriously sick people have to be airlifted to Shimla or Chandigarh because the medical facilities in the Valley are just minimal. The extremely cold weather conditions also reduce the working months to just four. Even in the month of May the night temperature dips down to five degrees celsius below zero The winter here sets in by September and the minimum temperature during winter goes down to forty degrees celsius below the freezing point The project being executed at an altitude of over twelve thousand feet above the sea-level is making steady progress despite all these adverse factors. The 2.5 Megawat project is likely to cost 13.5 crore rupees. The project envisages a small diversion on the Rongton Nullah before it joins the Spiti River at Rangrik Village The water is diverted through a 2870 metre long channel and a two hundred fiftyfour metre long tunnel into an open reservoir from where it will be taken through the penstocks to the turbines. The designing of the project has been neccssitated by the extremities of the weather conditions and makes the project unique The entire water channel is covered and the water reservoir is so designed that it continues to provide water to run the turbines even if most of it freezes during the winter. The penstocks are being specially treated by a firm from Pune. The penstocks will be buried underground and insulated against the cold so that the water does not get frozen causing damage to them. The water flow in the Rongtong Nullah is reduced considerably as the water freezes in the winter. This will result in the drop in power generation at the project. The demand for power will also go down in these months Thus the generation of power will always be in excess of the demand.

Scheduled to be commissioned on the 15th of August, 1986 the project is likely to improve the economic conditions of the tribals in Spiti valley.

The large fertile plateau which remains uncultivated for want of water and power will then start yielding rich cash crops of potatoes and highly remunerative off-season vegetables. This also make the valley self-sufficient in foodgrains. □

(Courtesy : Spotlight, AIR)

Fertilizer in Sixth Plan

Fertiliser industry, which witnessed a vigorous growth during the Sixth Five Year Plan, registered for the first time an overall capacity utilisation of 70 per cent in nitrogen and about 90 per cent in phosphate in the last year of the plan and maintained the level through 1985.

During the Sixth Plan, the capacity increased from 38.9 lakh tonnes of nitrogen and 12.3 lakh tonnes of phosphate at the beginning of the Plan to about 55.7 lakh tonnes of nitrogen and 17 57 lakh tonnes of phosphate. □

India among seven nations having fast breeder test reactors !

INDIA BECAME THE SEVENTH COUNTRY in the world and the first developing country to have an operating Fast Breeder Test Reactor at Kalpakkam near Madras, when the FBTR achieved criticality in October 1985. With the commissioning of FBTR began the second phase of Indian nuclear power programme.

The fast breeder reactors produce more fissile plutonium and uranium than they consume, hence the name breeder reactors.

Built at a cost of Rs. 68.72 crores, excluding fuel, the import content of FBTR comprises payments for design and manufacturing know-how, raw materials, proprietary items and a few manufactured components.

The design is based on that of the French RAPSODIE reactor. A number of modifications have, however, been incorporated in the BTR including the addition of sodium heated steam generators and a turbo generator to produce electricity (13 MW), in addition to the new carbide fuel.

The fuel which is a mixture of plutonium carbide and natural uranium carbide has been indigenously developed and has the possibility of producing a higher breeding ratio. Though carbide fuels of different compositions have been irradiated in experiments in many reactors, FBTR is the first reactor in the world to have a full core of mixed carbide fuel.

The construction of FBTR has been essentially an indigenous effort. All major components like the fuel and reflector sub-assemblies, reactors vessel, rotating plugs, control rod drive mechanisms, sodium pumps, intermediate heat exchangers, steam generators, turbo-generators, sodium piping, fueling machines, central data processing system, etc. have been manufactured within the country.

Despite very stringent specifications for fast reactor components, Indian industry was successful in achieving very close tolerances by adopting novel manufacturing techniques.

The sodium handling and purification techniques for FBTR as well as the sodium loops and rigs for component testing have also been developed indigenously at RRC. The entire quantity of sodium needed for the project was procured in the country and purified at site to the required nuclear grade.

As a test reactor, the major role of FBTR will be to serve as an irradiation facility for the development of fuel and structural materials for future commercial fast breeder reactor power plants and to further develop fuel reprocessing technology.

With one of the largest reserves of thorium in the world, use of thorium in the FBTR to produce U-233 and the experience gained in reprocessing to separate U-233 will greatly help India in the adoption of thorium fuel cycle in future. □

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Public Distribution System in Seventh Plan

THE SEVENTH PLAN STRATEGY recognises the public Distribution System (PDS) as a permanent feature to control prices, reduce fluctuations and achieve an equal distribution of essential goods. Though from the point of view of needs of the common man, cereals, sugar, edible oil, soft coke, kerosene, controlled cloth, tea, coffee, toilet and washing soaps, matchboxes and exercise books for children are considered essential items, the Central Government generally confines its responsibility to seven commodities namely, wheat, rice, sugar, imported edible oil, kerosene, soft coke and controlled cloth. These seven commodities constitute the core of the public distribution system in the Seventh Plan. States and Union Territories, however, may add to these items depending upon their local circumstances and demands.

An outlay of Rs. 41 21 crore and Rs. 2.80 crore has been allocated for the States and Union Territories respectively under the States/Union Territories Plan for civil supplies. In addition, an outlay of Rs. 2 50 crore has been made in the Central Plan for strengthening the public distribution system.

Expansion of the public distribution system has been made an important point of action in the revised 20-Point Programme. Special emphasis is being given to increase the number of fair price shops in the hitherto under-served and unserved areas and on organising mobile shops in far-flung regions. The main thrust of expansion is in the rural areas with special attention to remote and inaccessible areas so that the public distribution becomes supplemental to the poverty alleviation programme.

The total number of fair price shops increased from 2 39 lakhs in March, 1979 to 3 15 lakhs in January, 1985. The volume of sales through the public distribution system increased from 17 94 million tonnes in 1979 to 24 77 million tonnes in 1984.

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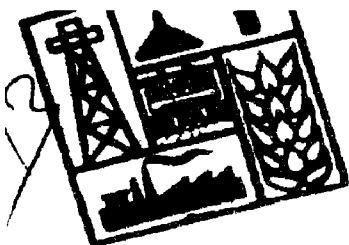
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Are inter-state disparities growing ?

Indigenising fast breader reactors

NEXT ISSUE
Long term fiscal Policy

Petroleum industry's excellent performance in Sixth Plan

THE GROWTH OF PETROLEUM INDUSTRY in India was particularly significant during the period of the Sixth Five Year Plan and the year 1985 was of exceptionally good achievements.

The total production of crude oil at the end of 1985 was expected to be 29 7 million tonnes comparing remarkably well against the previous year's figures of 27.93 million tonnes. The production of natural gas was estimated at 7790 million cu. metres compared to 6820 million cu. metres of 1984.

The Sixth Plan had given a very high priority to accelerating oil exploration. During 1980—85, exploration efforts by ONGC have led to the discovery of hydrocarbon bearing structures in various parts of Gujarat, Rajasthan, Assam, Andhra Pradesh, Nagaland, Tripura, offshore areas of West of Bombay, offshore areas off the coast of Godavari, Partonovo structure in Cauvery and in Palk Bay. Oil India Ltd., which became a fully-owned public enterprise in October 1981, also discovered oil in Arunachal Pradesh and has undertaken exploration in Rajasthan, Tripura, off the coast of Mahanadi and proposes to undertake exploration in Andaman & Nicobar Islands.

At the beginning of the year, India had 479 billion cubic metres of recoverable gas reserves. With the present production of 7-8 billion cubic metres per year, there is a highly favourable ratio of reserves-production. In the next five to ten years the utilisation of gas will be such that the production level may go up to 15 billion cubic metres per year.

On the refining side some major steps were taken during the year under review. Four new Fluid Catalytic cracking units with the total capacity of 2 8 million tonnes per year have been commissioned. The refining capacity has increased by 7 75 million tonnes from 37.8 to 45.55 million tonnes with the commissioning of the expansion projects of Madras refineries. Cochin Refineries, Hindustan Petroleum Refinery in Visakhapatnam and the Bharat Petroleum Refinery in Bombay. Benzene production facilities in the BPC in Bombay also was commissioned during 1985. For the first time now all the crude produced by the Bombay High offshore fields is being processed in refineries within the country.

The consumption of petroleum products has always been ahead of domestic production. During the Sixth Plan through a combination of pricing, fiscal and other conservation measures and methods of substitution of petroleum products of 40.72 million tonnes by the end of 1985 would in any case be above previous year's level of 37.79 million tonnes, the gross imports would be 16.94 million tonnes compared to the previous years' figure of 20.66 million tonnes.

The consumption of LPG i.e., cooking gas is expected to go up to 12.5 lakh tonnes by the end of 1985-86 compared to the previous financial year's level of 9.45 tonnes.

The Petroleum Conservation Research Association (PCRA) continued to take up the propagation of the need for petroleum conservation in industrial, transport, agriculture and domestic sectors. These activities have resulted in a saving of petroleum products on recurring basis valued at Rs. 100 crore per year. Those activities are expected to result in a saving of about Rs. 180 crore during the current financial year and Rs. 650 crore during the Seventh Plan Period. □

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Are inter-state disparities growing ?

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The authors, in this article, analyse the growth record of various states in terms of Net State Domestic Product and per capita State Domestic Product. They also trace the changes in sectoral shares of SDP thus indicating the structural change in economic activity over the years in respective states. These help answer questions whether the developed states have further speeded up the pace of their progress or the inter-state disparities have narrowed. The answers will have profound bearing on the relevance of development strategies, plan priorities and policy thrusts in future.

THE ALL-INDIA ESTIMATES OF National Income are being compiled on a regular basis by the Central Statistical Organisation for over three decades now. Over this period the estimates have been improved in terms of coverage and reliability. However, they still suffer from various deficiencies on account of inadequacy of data relating to certain sectors of the national economy, particularly the unregistered sector of industry, trade, transport, etc. Added to this is the time gap between two successive estimates which renders the estimates somewhat out-of-date for decision making.

Why SDP estimation ?

The estimates of State Domestic Product are of a comparatively recent origin. A couple of States had attempted such estimates even before 1950 They were crude in nature mainly on account of the limited data base. In course of time more States undertook the exercise of estimating State Domestic Product. However, even when such estimates became available for more and more States, they were not comparable due to difference in coverage and methodology and norms used. Hence the basic purpose of compiling these estimates, which was primarily to assess the performance of various States over time and to facilitate a comparison of relative levels of growth in different States, could not be achieved With the reorganisation of States and the carving out of new States, the position was further complicated.

Role of CSO

The Central Statistical Organisation (CSO) has recently made an effort to make the State estimates comparable by evolving a uniform methodology to be adopted by the States. This is the welcome move. However, the differences persist and strict comparability of State Domestic Product is still to be achieved All the same, CSO had done well in bringing together all available estimates of State Domestic Product in its publication "Estimates of State Domestic Product, 1960-61 to 1982-83, June, 1984"

The CSO study has covered two time series, one relating to the period 1960-61 to 1969-70 and the other covering the period 1970-71 to 1981-82 (in some cases up to 1982-83). These series are for Net State Domestic Product by industry of origin at current and constant prices (1960-61 prices for the first series and 1970-71 prices for the second series).

The indicators

State Income estimates are important indicators of economic development of a State. They are a valuable tool for policy formulation and Plan allocations. The Finance Commission too has been handicapped in the absence of reliable estimates of State Domestic Product in deciding allocations from the divisible

Central revenues. The State domestic product, per capita SDP and sectoral shares of SDP are important indicators of regional imbalances and disparities as well as of the potential for growth and structural transformation of the regions concerned. As neatly summed up in the CSO publications : "The estimates of State Income, i.e., the Net State Demostic Product at factor cost are regarded as the most important single economic indicator to measure the ecoomic development of a State. The per capita State domestic product (SDP) is used to determine both the absolute and relative performance of the economy of the State. It is regarded as an important tool to measure regional disparities. The indicator of per capita State Income is now frequently used in India by policy makers like the Planning Commission and Finance Commission for allocation of a part of Plan resources and distribution of Union Excise duties and additional excise duties to different States".

This article analyses the growth record of various States in terms of Net State Domestic Product and per capita State domestic product. It also traces the changes in sectoral shares of SDP, thus indicating structural change in economic activity over the years in respective States. What is more important is the focus on the relative performance of States with a view to answering questions like : Have the States already more developed further accelerated their pace thereby further distancing themselves from the laggards ? Or, have the inter-State disparities narrowed ? The answers to these questions will have profound bearing on the relevance or otherwise of the development strategies and Plan priorities followed in the past and on the policy thrusts for the future

Growth rates

Table 1 traces the annual growth rates of Net State Domestic Product over the two periods, viz, 1960-61 to 1969-70 and 1970-71 to 1981-82 It may be noted that the all-India NDP annual rate was 3 3 per cent per annum during the first period. There was a marginal improvement to 3.4 per cent during the second period. As against this, the growth rates recorded by the States ranged from a low of 1.4 per cent in the case of Bihar to the peak of 10 1 per cent for Orissa The States of Assam, Gujarat, Haryana, J & K, Karnataka, Kerala, Manipur, Punjab and Delhi registered rates higher than the all-India average. The growth rate was significantly higher in Haryana, Manipur, Punjab & Delhi, apart from Orissa which had the highest growth rate Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Tripura, U P and West Bengal had growth rates lower than the all India average The performance was particularly poor in the case of Bihar, Madhya Pradesh and Rajasthan whose growth rates were around half the all-India average

During the second period, viz, 1970-71 to 1981-82, growth rates improved for Andhra Pradesh, Bihar, Jammu & Kashmir, Maharashtra, Tripura and Tamil Nadu, while Assam, Haryana, Karnataka, Kerala, Manipur, Orissa, Punjab and West Bengal showed a decline in the growth rates. Interestingly, the difference in the performance of different States did not vary as widely as in the first decade. Thus it may be noted that the highest growth rate was registered by Delhi (5.9 per cent) while the lowest growth rate was 2.1 per cent in the case of West Bengal. There was a greater convergence of State growth rates on the all-India average. A number of States notched up a growth rate ranging between 4 and 5 per cent. These States were Andhra Pradesh, Haryana, J & K, Maharashtra, Manipur, Punjab, Tripura and Delhi.

Performance

Table 2 presents the relative performance of different States on the basis of growth rates of per capita Net Domestic Product. For the country as a whole, per capita income increased, more or less, at an unchanged rate, viz, 1.1 per cent per annum during 1960-61 to 1969-70 and 1.2 per cent during 1970-71 to 1981-82. Once again, there was considerable variation in the growth rates of different States during the first period, a phenomenon which was earlier noticed in regard to the growth rates of State Domestic Product for these States. As may be expected, Orissa, which registered the highest growth rate in its SDP, had by far the most spectacular growth of per capita Net State Domestic Product growth rate at 8 per cent per annum At the other extreme, there were States like Bihar, Madhya Pradesh and Rajasthan where the per capita income actually declined The growth rate was lower than the all India average in the case of Andhra Pradesh, Assam, Gujarat, J & K, Maharashtra, Tamil Nadu U P., West Bengal and Delhi. It was significantly higher than the all-India average in, apart from Orissa, in Tripura, Punjab, Haryana, Manipur, Karnataka Kerala and Himachal Pradesh. In the remaining States it was close to the all-India average.

During the second period 1970-71 to 1981-82 consistent with the convergence on the all-India average noticed in the case of SDP growth rates the variation in the States growth rates of per capita income was considerably narrowed down More States moved, if marginally, above the all-India average. Moreover, Bihar, which had a negative growth rate during the first decade, increased its per capita income by 1 per cent per year during the 70s U.P. also more than doubled its growth rate, though it was still below the all-India average. Delhi too nearly doubled its growth rate surpassing the country's average However, some of the relatively progressive States experienced a set-back For example the growth rate of Gujarat, which was already below the national average, declined during the 70s The per capita income of Rajasthan continued to decline

all through the period 1960-61 to 1981-82. It is obvious that in certain States like Gujarat the marginal improvement in the overall growth rate was more than neutralised by the growth in population.

Structural change

Table 3 is an analysis of the structural change taking place in the State economies which is demonstrated by the change in the sectoral shares in SDP. For the country as a whole there was a significant shift from primary industries to secondary and tertiary industries. The share of the primary sector in the country's domestic product declined by nearly 15 percentage points from 56 7 per cent in 1960-61 to 41.8 per cent in 1981-82. While the share of the secondary sector went up from 16 9 per cent in 1960-61 to 27.20 per cent in 1981-82, there was an impressive increase in the share of the tertiary sector from 26.4 per cent to 31.0 per cent This is a disconcerting phenomenon for a developing economy in as much as the services sector expanded more rapidly than the commodity producing sector However, there is no doubt that of at a time when employment opportunities are shrinking in agriculture and those in industry are not expanding fast enough, the services sector has played an important role of absorbing a part of the rising labour force The picture at the State level was considerably mixed and did not fall in the pattern comparable to the all India picture. The case of Assam particularly stands out and obviously need explanation. The share of the primary sector in Assam's SDP increased, if marginally. But what was more intriguing was the steep fall in the share of the secondary sector from 31.4 per cent in 1960-61 to around 17 per cent in the following two decades What the secondary sector lost was gained by the tertiary sector whose share more than doubled from 11 per cent to nearly 23 per cent. Manipur, Orissa and West Bengal represented a picture of almost frozen shares of the three sectors in SDP. At the other extreme, significant structural changes took place in Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Punjab and Tamil Nadu It is interesting to note that though the shares of agriculture and allied activities declined somewhat in the case of Haryana and Punjab, these two highly prosperous States continued to be pre-dominantly agricultural economies In both the States the share of the primary sector remained more than half of the total SDP. On the other hand, there was a significant shift away from primary activities in the case of Karnataka and particularly Maharashtra.

Thus the early 60s were characterised by the predominance of the agriculture-based primary sector In all States, except Maharashtra, Gujarat and West Bengal, the primary sector accounted for more than half the domestic product In the case of Madhya Pradesh, the share of the primary sector was nearly 70 per cent. This over-riding dominance of the primary sector has gradually declined over the years The most notable transformation has taken place in the case of Tamil Nadu where the share of the primary sector has declined from 51.9 per cent to 29.3 per cent during the last two decades. The change in the case of Kerala is also noteworthy. As for the secondary sector, some of the fairly developed States such as Gujarat and Maharashtra had significant secondary activity even in the early 60s with the share of around 30 per cent of the SDP. This has further increased in these States in the following years.

Differential growth level

Is it possible to draw any conclusions regarding the differential growth levels resulting in intra-State and inter-State imbalances and disparities from the estimates of SDP available for the various States ? The intra-State rural-urban disparities can be broadly analysed on the basis of the levels of per capita rural and urban incomes in each State. For this purpose the income generated in the primary sectors may be considered as roughly representing the rural income while the income originating in the secondary and tertiary sectors may be considered as the urban income The primary sectors comprise agriculture, forestry and logging, and mining and quarrying. The rest of the sectors are considered as broadly representing the urban segments The per capita incomes for the years 1960-61, 1970-71 and 1981-82 are compared for the various States and all-India in Table 4

A noticeable feature of the data is the direct corelation between the levels of rural income and aggregate income This is only to be expected owing to the pre-dominance of the primary sector in the State Domestic Product Some interesting features of the movement of rural and urban per capita incomes in various States in relation to all-India levels emerge from the table. The relative rural prosperity of Andhra Pradesh, Karnataka, Orissa, and Tripura is evident and seems to be increasing both in relation to all-India and urban income of the respective States. The rural income levels in these States have been higher than the all-India levels while the urban incomes have been lower. There are other States where average rural incomes are higher than urban incomes but these have remained below all India levels. Such States are Bihar, Madhya Pradesh, Manipur and U P The States of Kerala, Tamil Nadu and West Bengal present an irregular pattern but, on the whole, the rural income levels in these States declined in relation to the urban income levels. However, the most outstanding examples of high and growing rural prosperity are obviously Punjab and Haryana While the per capita income of Punjab was only about 20 per cent higher than the all-India average in 1960-61 it was twice the all-India level in 1981-82 The index of rural per capita income relation to all-India doubled from 121 in 1960-61 to

245 in 1981-82. The record of Haryana has not been as impressive; even so, it is remarkable. In both the States rural as well as urban incomes increased substantially in relation to the all India levels. On the other, there was the example of Maharashtra. The State experienced considerable deterioration of its level of rural per capita income both in relation to the all India average and the per capita income in urban Maharashtra, though there was some improvement in respect of the latter in the 70s. In Tamil Nadu, West Bengal, and Gujarat the level of urban incomes continued to be higher than the rural incomes when compared with the all-India averages.

Conclusion

Thus it may be inferred that, as certain States lagged behind the average national achievement and others forged ahead faster, the inter-State disparities widened. Assam appears to have lost ground as it distanced further from the national per capita income. Bihar was another and greater loser as its per capita SDP slipped from 81 per cent of all India in 1960-61 to 62 per cent in 1981-82. In the case of Madhya Pradesh, the ratio deteriorated from 82 per to 72% It also slipped from 92% to 80 per cent in the case of Rajasthan While, U P and H P suffered a marginal set-back, in the case of West Bengal there was a steep fall in the ratio from 127 per cent to 101 per cent, though still nominally higher than the all India average. Tamil Nadu was also a loser as its per capita SDP declined from 109 per cent of all India level to 93 per cent The position remained broadly unchanged in the case of Karnataka and Kerala. On the other hand, the gainers were Andhra Pradesh, Gujarat, Maharashtra, Manipur, Orissa, Tripura, and of course. Punjab and Haryana As the most populated and backward States like U P., Bihar as well as other backward States like Madhya Pradesh, Rajasthan and Assam lagged behind the country as a whole, the inter-State disparities must have been only accentuated during the last two decades. So too the rural-urban disparities. If so, this is a serious reflection on Plan priorities and the implementation of development programmes This is a pointer to the urgent need for serious re-appraisal of the basic approach to development in future.

Table 1

Annual Growth Rates of Net State Domestic Product (%)

State	1969-70/1960-61 (at 1960-61 prices)	1981-82/1970-71 (at 1970-71 prices)
1	2	3
1. Andhra Pradesh	2.9	**4.0**
2 Assam	**3.8***	3.3
3 Bihar	1.4	3.2
4 Gujarat	**3.4**	**3.7**
5 Haryana	**6.0**	**4.5**
6 Himachal Pradesh	N A.	2.8
7. J & K	**3.4**	**4.6**
8 Karnataka	**3.4**	2.3
9 Kerala	**3.7**	2.4
10 Madhya Pradesh	1.7@	2.8
11 Maharashtra	2.9	**4.6**
12 Manipur	**6.0**	**4.8**
13 Orissa	**10.0@**	3.4
14 Punjab	**5.5**	**4.9**
15 Rajasthan	1.8	2.2
16 Tamil Nadu	2.0	2.9
17 Tripura	3.1	**5.0**
18 Uttar Pradesh	2.0	2.9
19 West Bengal	2.5	2.1
20 Delhi	**5.3**	**5.9**
All India NDP	3.3	3.4

@All estimates are at 1970-71 prices

*Estimates are at 1948-49 prices

(Growth rates exceeding All India average are emphasised)

Table 2

Annual Growth Rates (%) of Per Net State Domestic Product

State	1969-70/1960-61 (at 1960-61 prices)	1981-82/1970-71 (at 1970-71 prices)
1	2	3
1 Andhra Pradesh	1.0@	1.8
2 Assam	0.9*	0.2
3 Bihar	(—)	1.0
4 Gujarat	0.8	0.3
5 Haryana	**3.1**	**1.9**
6 Himachal Pradesh	**2.6**	0.1
7 J & K	0.8	**2.0**
8 Karnataka	**1.4**	
9 Kerala	**1.4**	0.6
10 Madhya Pradesh	(—)@	0.3
11 Maharashtra	0.4	**1.9**
12 Orissa	**8.0**	**1.5**
13 Punjab	**3.7**	**2.7**
14 Rajasthan	(—)	(—)
15 Tamil Nadu	0.1	**1.3**
16 Tripura	**4.7**	**1.8**
17 Uttar Pradesh	0.3@	0.7
18 West Bengal	0.1	(—)
19 Delhi	0.9	**1.7**
All India	1.1@	1.2

@Estimates are at 1970-71 prices

*Estimates are at 1948-49 prices

(Growth rates higher than all India average are emphasised)

Sectoral Composition of SDP (Percentage Distribution) at constant

State	Primary industries (agriculture, forestry, mining and quarrying)			Secondary industries (mfg., construction, transport, electricity)			Tertiary industry (trade, banking, real estate, public admn and others)		
	1960-61 (at 1960-61 prices)	1970-71 (at 1970-71 prices)	1981-82	1960-61 (at 1960-61 prices)	1970-71 (at 1970-71 prices)	1981-82	1960-61 (at 1950-61) prices)	1970-71 (at 1970-71 prices)	1981-82
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1 Andhra Pradesh@	61.79	57.17	51.40	14.97	18.86	21.07	23.24	24.00	27.20
2. Assam	57.47	63.80	60.00	31.40	17.40	17.10	11.10	18.78	22.87
3. Bihar	58.00	62.76	50.90	16.86	22.14	27.60	25.30	15.10	21.40
4 Gujarat	41.80	48.90	33.18	31.06	21.50	35.20	27.10	25.50	31.60
5 Haryana	62.90	64.76	50.90	18.60	18.56	22.50	18.40	16.60	26.50
6 Himachal Pradesh	56.70	57.20	49.60	19.30	19.90	23.00	23.90	22.80	27.20
7 Jammu & Kashmir	67.60	55.90	48.70	12.60	19.20	26.90	19.70	24.80	24.39
8 Karnataka	61.20	59.60	47.10	17.80	21.90	28.12	20.90	18.40	24.70
9 Kerala	55.98	49.40	39.10	19.90	21.15	27.60	24.10	29.40	33.20
10 Madhya Pradesh@	69.56	62.16	50.90	14.87	19.02	23.90	15.50	18.80	25.10
11 Maharashtra	41.80	28.60	28.40	32.35	40.52	40.32	25.80	30.80	31.40
12 Manipur	55.60	53.90	57.60	11.80	11.40	11.70	32.40	43.50	31.00
13 Orissa@	64.50	67.30	66.16	14.20	13.30	14.20	21.10	19.40	19.60
14 Punjab	54.00	58.36	50.40	19.80	18.80	22.30	26.10	22.80	27.20
15 Rajasthan	57.00	64.50	53.80	20.10	17.20	19.70	22.80	18.10	26.35
16 Tamil Nadu	51.90	39.80	29.30	21.00	31.50	39.40	26.90	28.60	31.30
17 Tripura	62.70	70.00	60.20	6.50	8.60	13.10	30.70	21.30	26.70
18 U P	65.70	60.20	52.30	14.00	18.90	25.70	20.20	20.80	21.90
19 West Bengal	42.50	45.40	41.10	30.10	28.00	30.60	27.30	26.80	28.20
20 Delhi	7.10	6.90	3.75	41.10	38.90	35.80	51.80	54.00	60.40
All India@	56.70	50.10	41.80	16.90	24.20	27.20	26.40	25.70	31.00

@Estimates are at 1970-71 prices
*Estimates are at 1948-49 prices

Table 4

Inter-state disparities in India

(at Current prices)

State	Per capita income index 1960-61			Per capita income index 1970-71			Per capita income 1981-82		
	Aggregate	Rural	Urban	Aggregate	Rural	Urban	Aggregate	Rural	Urban
1	2	3	4	5	6	7	8	9	10
All India	100	100	100	100	100	100	100	100	100
1 A P	90	94	72	92	104	79	100	124	83
2 Assam	95	104	86	84	106	60	76	109	52
3 Bihar	81	78	61	63	78	47	62	76	52
4 Gujarat	119	94	131	129	126	133	132	123	139
5 Haryana	106	128	82	137	177	97	150	182	127
6 H P	N A	N A	N A	106	121	90	102	132	80
7 J & K	87	113	59	86	96	67	95	111	84
8 Karnataka	96	113	78	107	127	87	95	114	84
9 Kerala	84	90	77	93	92	94	89	83	93
10 M P	82	94	57	76	94	57	72	91	57
11 Maharashtra	133	106	162	123	70	175	141	96	173
12 Manipur	50	53	46	59	63	54	65	89	47
13 Orissa	66	80	50	75	100	49	79	125	45
14 Punjab	119	121	113	168	195	140	202	245	171
15. Rajasthan	92	101	83	97	125	69	80	102	65
16 Tamil Nadu	109	108	109	91	72	109	93	65	113
17 Tripura	81	97	63	78	109	47	87	119	56
18. U.P.	76	88	63	76	91	60	72	92	58
19. West Bengal	127	103	152	113	101	124	101	99	101
20 Delhi	217	29	423	188	26	350	201	18	333

. . . and inter-district disparities too !

(study of Himachal Pradesh)

P.K. Gupta

In the paper, the author pinpoints the wide variations in the levels of development in the key sectors of the economy in the twelve districts of Himachal Pradesh. He feels government departments and agencies engaged in the development works should enhance the size of development programmes of the sector in a district which is relatively less developed in respect of programmes. A useful study will also have to be made of the nature of the problems and impediments to rapid development in particular field.

HIMACHAL PRADESH IS ONE OF THE relatively less developed states in the country Within the state also there is much disparity in the levels of development of different districts

The State of Himachal Pradesh occupies only 1.70 per cent of the area of the Indian nation and ranks 14th in terms of area The state ranks 18th in terms of population and the density of population comes 77 persons per Sq. Km. which is very low as compared to the Nation's density of 221. The literacy percentage of the State is 41 94 which is higher than the nation's literacy rate of 36.17. The State ranks 6th among the states of India on the basis of comparable estimates of per-capita State Domestic Product for the year 1981-82.

Regional imbalance

But all that glitters is not gold. In Himachal Pradesh the problem of regional imbalance is more serious in nature. It postulates a picture of extreme regional variations in terms of almost all indicators of economic growth, such as variation in consumption of electricity or percentage of villages electrified, railway and road length, medical and educational facilities, etc. Broadly speaking, some districts are backward while others are highly advanced. Due to widening inter-district economic disparities the people in the advanced districts are getting more benefits than those residing in less developed districts. As a result of this, unemployment, poverty, low per-capita income, low yield per hectare etc. are more common phenomina and conditions of the people are deteriorating every year.

In this paper an attempt has been made to pinpoint the wide variations in the levels of development among the twelve districts in the key sectors of the economy. The following indicators have been taken into consideration for measuring economic distances among the districts.

(1) Percentage of workers engaged in agriculture.

(2) Average yield of cereals per hectare.

(3) Percentage of net irrigated area.

(4) Percentage of villages electrified.

(5) No. of workers per lakh of population employed in registered factories.

(6) Length of total metalled and unmetalled road per 1000 Km. of area.

(7) Beds and medical institutions for lakh of population ; and

(8) Percentage of literacy rate.

Density of population

The eight districts viz. Bilaspur, Hamirpur, Kangra, Mandi, Shimla, Sirmaur, Solan and Una are the most densely populated among all the twelve districts of the state. According to the census of 1981 the average density in these districts is 174 persons per sq. Km. as against 77 for the state The four districts of the state viz. Chamba, Kinnaur, Kullu and Lahaul-Spiti are sparsely populated and the average density for these districts stands only 25 persons per square kilometer The highest density of population stands for Hamirpur district 282 persons per Sq Km and the lowest with only 2 persons per Sq. Km. stands for Lahaul-Spiti.

Agriculture

Agriculture is the main-stay of the population of the state and it provides direct employment to about 72.4 per cent of the total working population of the state.

Table 1 reveals that the six districts, viz., Bilaspur, Chamba, Hamirpur, Kullu, Mandi, and Sirmaur have more percentage of cultivators than the State's percentage of 69.44 cultivators. The remaining six districts viz , Kangra, Kinnaur, Lahaul-Spiti, Shimla, Solan and Una have more percentage of agricultural labourers than the State's percentage of 2.93 per cent. It can also be perceived from table 1 that total agricultural labour force is much higher in five districts viz. Bilaspur, Hamirpur, Kullu, Mandi and Sirmaur than the State's total agricultural labour force of 72 37 per cent. The remaining seven districts have lower percentage of agricultural labour force than the State's percentage of agricultural labour force. Small holdings are predominant in hill economy. More than 60 per cent of the households in the hill economy are marginal or small farmers

Table 1
Percentage of Workers engaged in Agriculture 1980-81

Sl No	Districts	Cultivators	Agricultural Labourers	Total
	(1)	(2)	(3)	(4)
1	Bilaspur	77 01	1 49	78 50
2	Chamba	69 53	0 67	70 20
3	Hamirpur	71 52	2 16	73 68
4	Kangra	60 24	5 87	65 91
5	Kinnaur	62 65	5 77	67 92
6	Kullu	80 29	2 00	82 29
7	Lahul Spiti	50 54	2 38	52 82
8	Mandi	77 60	1 33	78 93
9	Shimla	67 66	2 86	70 52
10	Sirmaur	73 09	2 17	75 26
11	Solan	65 60	2 44	68 04
12	Una	61 79	6 31	68 10
	Himachal Pradesh	69 44	2 93	72 37

Average yield

The average yield of important crops of different districts is given in Table 2

It can be seen from table 2 that the yield of rice is higher in seven districts viz Bilaspur, Chamba, Kangra, Shimla, Sirmaur, Solan and Una than the state's yield of rice 11 10 Qtls per hectare In the remaining five districts namely, Kinnaur and Lahaul-Spiti rice is not grown because of the unsuitability of the climatic conditions, the other three districts, Hamirpur, Kullu and Mandi have lower yield of rice than the state's yield.

The yield of wheat is higher in Chamba, Lahaul-Spiti, Sirmaur and Una than the state's yield of wheat 12 68 Qtls per hectare The other eight districts have lower yield than that of the state The yield of maize is respectively high in Chamba, Shimla and

Table 2 Average Yield Per Hectare (in Qtls.)

Sl No	Districts	Rice	Wheat	Maize	Barley	Average yield cereals
1	2	3	4	5	6	7
1	Bilaspur	14 90	11 80	11 60	10 00	19 90
2.	Chamba	12 10	14 50	22 70	12 40	18 20
3	Hamirpur	10 40	10 80	11 60	15 50	11 10
4.	Kangra	13 90	12 40	14 80	6 80	13 30
5	Kinnaur	—	11.30	15 50	12 70	12 40
6	Kullu	9 10	11 20	16 40	17 30	13 60
7	Lahaul-Spiti	--	23 30		27 00	26 20
8	Mandi	9 20	11 60	16 40	12 10	12 60
9	Shimla	11 50	11 90	19 40	12 30	14 40
10.	Sirmaur	20 40	13 50	18 70	8 90	15 90
11.	Solan	11 30	10 10	17 50	9 10	13 80
12.	Una	14 60	12 90	10 50	—	11.70
	Himachal Pradesh	11 10	12 60	18 10	14 30	13 50

irmaur districts than the State's yield of 16.10 Qts. per hectare. The other nine districts have lower yield of maize than that of State. The yield of Barley is higher in the districts of Hamirpur, Kullu and Lahaul-Spiti than the state's yield of 14.3 quintals per hectare. The remaining nine districts have low yield of Barley than that of the state.

The yield of foodgrains is quite high in the districts of Chamba, Kullu, Lahaul-Spiti, Shimla, Sirmaur, and Solan than the State's yield of foodgrains of 13.50 quintals per hectare. The remaining six districts namely, Bilaspur, Hamirpur, Kangra, Kinnaur, Mandi and Una have low yield of foodgrains than that of the state.

Table 3 relates to the percentage of net area irrigated to net area sown.

Table 3

Sl. No.	Districts	Percentage of Net area irrigated to Net area shown (1979-80)
1	2	3
1	Bilaspur	7 74
2.	Chamba	8 68
3.	Hamirpur	3.76
4	Kangra	29 44
5.	Kinnaur	53 89
6.	Kullu	7 33
7.	Lahaul Spiti	100 00
8.	Mandi	15 11
9.	Shimla	6 42
10.	Sirmaur	24 64
11.	Solan	17 85
12.	Una	5 63
	Himachal Pradesh	16 05

It can be observed that only five districts namely, Kangra, Kinnaur, Lahaul-Spiti, Sirmaur and Solan have higher percentage of net irrigated area than the state's percentage of 16 05 per cent. The remaining seven districts have lower percentage of net irrigated area than that of state. Lahaul-Spiti is the only district with 100 per cent of the net irrigated area.

Power

Power facilities form the basis for agricultural and industrial development. The per-capita consumption of electricity can provide an idea about the extent of power facilities available in different district-wise consumption of electricity. We can have an idea of power facilities from the number of villages electrified district-wise which has been shown in table 4.

Sl. No	Districts	Percentage of villages electrified (as on 31-3-1983)
1	2	3
1.	Bilaspur	84.19
2.	Chamba	73 97
3.	Hamirpur	78.57
4.	Kangra	83.19
5.	Kinnaur	84 42
6.	Kullu	72.19
7.	Lahaul-Spiti.	57 45
8.	Mandi	63 75
9.	Shimla	82.50
10.	Sirmaur	84.25
11.	Solan	65.17
12.	Una	71 45
	Himachal Pradesh	75.63

From table 4. it can be seen that only six districts viz. Bilaspur, Hamirpur, Kangra, Kinnaur, Shimla and Sirmaur have higher percentage of villages electrified than the state's percentage of 75.63. The remaining six districts have lower percentage of villages electrified than that of the state.

Industries

An idea of industrial development can be had from the number of workers employed in registered factories

Table 5

Sl No.	Districts	Number of workers per lakh population employed in registered factories (1981-82)
1	2	3
1.	Bilaspur	481
2	Chamba	209
3.	Hamirpur	100
4.	Kangra	214
5.	Kinnaur	99
6.	Kullu	230
7.	Lahaul-Spiti	—
8.	Mandi	750
9	Shimla	343
10.	Sirmaur	610
11.	Solan	1149
12.	Una	210
	Himachal Pradesh	409

From table 5. it can be perceived that only four districts viz. Bilaspur, Mandi, Sirmaur, and Solan have higher number of workers per lakh of population in registered factories than the state's number of workers engaged in industrial sector being 409 persons per lakh of population. The remaining eight districts have lower number than that of the state.

Roads

Roads form an important infrastructure for accelerating the process of economic development of an area. The relative position of metalled and unmetalled roads is shown in table 6.

Table 6

Sl. No	District	Length of metalled road per 100 Sq. Kms. of Area	Length of total metalled and unmetalled road per 1000 Sq. Km. of area
1	2	3	4
1.	Bilaspur	233	657
2.	Chamba	39	147
3.	Hamirpur	148	689
4.	Kangra	147	421
5.	Kinnaur	38	58
6.	Kullu	40	113
7.	Lahaul-Spiti	6	38
8.	Mandi	133	414
9.	Shimla	142	362
10.	Sirmaur	140	479
11	Solan	181	537
12	Una	244	523
	Himachal Pradesh	80	236

Except for Chamba, Kinnaur, Kullu, and Lahaul-Spiti all other districts have more length of metalled roads per 1000 Sq. Kms. than the state's average of 80 Km per 1000 Sq. Kms.

Medical

Medical services occupy a significant place in a welfare state. We can have an idea of these services from the number of medical institutions and the beds available per lakh of population in different districts shown in table 7

Table 7

Sl No	Districts	Medical institution per lakh of population	Beds available per lakh of population (1978-79)
1	2	3	4
1	Bilaspur	17	114
2	Chamba	20	170
3	Hamirpur	10	55
4	Kangra	12	105
5	Kinnaur	64	237
6	Kullu	19	93
7.	Lahaul-Spiti	53	112
8	Mandi	13	103
9	Shimla	22	238
10.	Sirmaur	18	148
11.	Solan	18	216
12.	Una	13	35
	Himachal Pradesh	17	129

From table 7 it is obvious that except the districts of Hamirpur, Kangra, Mandi and Una all the districts are having higher number of medical institutions than the state's number of 17 medical institutions per lakh of population. It can also be perceived that except the districts of Chamba, Kinnaur, Shimla, Sirmaur and Solan all other districts have less number of beds available than the State's average of 129 beds per lakh of population

Literacy

We can have an idea of literacy rate of different districts from table 8.

Table 8

Sl No	Districts	Literacy Percentage (year 1981)
1	2	3
1.	Bilaspur	44 24
2	Chamba	26 02
3.	Hamirpur	52.29
4.	Kangra	48 01
5	Kinnaur	37 02
6	Kullu	33 44
7.	Lahaul-Spiti	31 60
8	Mandi	39 83
9	Shimla	42 42
10.	Sirmaur	31 57
11.	Solan	40 90
12	Una	49 82
	Himachal Pradesh	41 94

Table 8 reveals that besides the districts of Bilaspur, Hamirpur, Kangra, Shimla and Una all other districts have lower literacy rate than that of the state's literacy rate 41.94 Hamirpur district has the highest literacy rate 52.29 per cent, whereas, Chamba district has the lowest literacy rate 26.2 per cent.

Banking of districts

Table 9 reveals the levels of development of different districts, as indicated by certain indicators. An attempt has been made to rank the districts according to their level of development. Among the twelve districts of the state, the most developed district, with respect to particular indicator, has been assigned rank No 1, whereas the least developed district was ranked 12. But in the case of agricultural labour force the district which has highest percentage of agricultural force has been assigned rank number twelve. Whereas the district which has lowest percentage of agricultural labour force has been assigned rank number 1.

From table 9 it is obvious and ranking of the districts also testifies that Solan district is the most developed district, whereas Kullu district is the least developed district of the state. The position of the districts with respect to the level of development stand respectively as follows

(Continued on page 18)

The imperative of district level planning

Krishna Mohan and
Y.P. Gupta

'he authors here suggest a new concept of 'istrict level planning. According to them, 'he planning efforts should start at the grass-oots level for the balanced growth of all 'he regions and all the sections of the popu-ıtion. They feel a systematic study of 'he locational implications must precede 'he implementation of the plans and pro-rammes and there must be proper coordi-ation of developmental efforts at all levels.

THE PRINCIPAL OBJECTIVE OF PLANNING to utilise scarce resources for optimum develop-nt, i.e. getting maximum benefit out of the avail-le resources.

In India, planning is all the more important, as know that "India is rich with poor people." We ve ample resources at our command; however, it extremely necessary that proper co-ordination d planning of the various schemes is carried out such a way that the desired results are ensured.

The Government at the Centre and the State is, course, serious about development. Our Five ar Plans have provided a broad framework of ınning for future growth. The main thrust of 'se plans has been towards higher production and tter living standards. Some of these efforts have ulted in producing good results. The look of the tional Economy is definitely better and healtheir ın before. But still more can be done in this pect

Better production necessitates proper attention to be given for better distribution of the additional wealth generated. It also necessitates better market-ing storage and transport facilities for removing re-gional imbalances.

Planning for development

So far we have believed in Macro Planning Ap-proach; plans are formulated at Country State Level. However, a systematic study of the locational impli-cations must precede the implementation of the plans|programmes. Practically, once the budget al-locations on the basis of national priorities are de-fined at national and State levels, the actual loca-tion of these programmes should be left to the district level committees (discussed later-on).

The planning efforts should start at the grass root level for the balanced growth of all the re-gional and all the sections of our population. Such an approach will lead to proper social justice and better economic development.

The question of location-specific of a particular service is very important as this is an integral ele-ment in the rational allocation and mobilisation of resources. Location studies must precede any invest-ment and in its support there are scientific reasons too :

1. The enormous expenditure on development must pay off in terms of self generating cycles of growth. Growth impulses should be provided in the right place and in the right proportions.
2. The uneven impact of past development efforts could be corrected and future im-balances foreseen.

3. The impact of increased Agricultural|Industrial production must be harnessed by all which could be done through efficient system of marketing, distribution & transportation.

4. The pace of economic growth can be maintained only if there is free flow of backward and forward linkages i.e. credit, improved seed, fertilizers, raw material, machines, technical knowledge and markets etc.

5. To keep up the rate of economic growth other services will also be required viz; educaton, health, communication and better distribution system etc. These elements will have to be taken care of in planning.

Thus, one of the essential pre-requisites for decentralised planning at District and Block Level is the disaggregation of divisible outlays from the State plan to the Districts and Blocks in the country on some rational basis.

The community development programme was a right step in the right direction. The approach was somewhat closer to Microlevel planning. But the programme did not produce desired results. The programme suffered from the following defects :

— Small towns were left out of the Block Development programmes. These towns could have served the rural population for providing linkages and employment apportunities.
— In Blocks, too, the allocations were made on adhoc basis and there, too, some pockets, in the blocks could get preferences.
— The individual village was accepted as a unit of development. But there was no planning. Its normally not known to B.D. & P.S. as to what amount will be made available to the block for development purposes. It is generally after some time that allocations are made and sometimes unused budgets at the State level are diverted to Blocks|Districts for spending. Most of the projects, so stated either remain incomplete &|or are not beneficial to the public at large, keeping in view the investment involved.

There are a number of Development Agencies| Departments. engaged in the process of development. For each & every aspect|way of life, there is a separate agency. But some agencies are performing similar nature of function resulting in unfair competitions, misutilisation of scarce resources and wasteful expenditure.

Practically there is hardly any co-ordination amongst various agencies and each agency is functioning independently.

In real way of life there is inter-dependence at every stage. Because of lack of co-ordination, Government resources sometimes cannot be utilised as effectively as one would want them to be.

Need for proper co-ordination

There is lack of co-ordination at every level. Let us take an example:—If we decide at State Level| National Level that some roads|bridges are required at specific points, what is normally done is that the projects are sanctioned & meagre start is made on all the projects. Further flow of funds may not be forthcoming for all the same time. If, for example, 5 projects are cleared and the funds in a particular year are sufficient only for one project, it would obviously be better if only one project is started. The second project could be implemented in the 2nd year and so on.

Such type of problems arse because these projects are mainly decided at the State Government|Central Government Level. The role of District Administration is negligible. If the District Administration also involved and the funds are released in full| proportion keeping in view the time to be spent for completion of the project, no project would suffer for want of funds. The fruits would be available to the people much earlier.

Sometimes a lot of time is spent in deciding as to which department has to implement a particular project as there are multiplicity of construction agencies like Municipality, Improvement Trust, PWD, Forest, Urban Development Authority. Housing Board, Panchayati Raj and so on. The projects, though cleared, cannot be implemented unless there is proper co-ordination.

Let us take another example, Agriculture Department is interested in providing irrigation facilities to a particular person. The party installs a tube-well either by owned money or borrowed money. But the power connection is not made available for years together. As there is no power co-ordination amongst the Agriculture Department, Irrigation Department, Electricity Board and Banks, the beneficiary suffers.

In some cases, the roads are constructed but cannot be used effectively because some bridge is required on a particular canal. There is involvement of 2 different departments and the amount spent on roads is not of much use till the bridge is cleared. If there is proper planning|co-ordination, such delays and wasteful expenses can be avoided. Since all departments are independent, no responsibility can be fixed for these delays.

Multiplicity and overlapping

In the sphere of banking also, multiplicity and overlapping exists. There are about 30-40 branches

of various banks in a city. All banks are transacting same type of functions|business. But there is a cut-throat competition and sometimes unethical practices are followed by some banks. Bankers lured to secure deposits, either spend heavy amounts on gifts|entertainments or make advances to such borrowers who are not otherwise eligible. It all leads to wastage of public money If there is one banking corporation & there is a control of corporation branches by the District Committee, Government can save a lot and also extend better customer service

Moreover, there are a number of financing organisations viz various commercial banks, co-operative bank, Primary Land Development Bank, State Financial Corporation, Regional Rural Banks, Khadi Village Industries Board. Some borrowers are able to manage finance from more than one Agency and that too on the same assets, thus resulting in a waste of scarce capital.

The reasons for not achieving desired results can, therefore, be attributed to the following :

(1) Improper planning.

(2) Priorities are not properly defined.

(3) The plans|projects, which are launched, are left unachieved|incomplete in between for various reasons. The capital is thus not utilised properly.

(4) Lack of proper backward & forward linkages.

Today we have in our country, a very large numbers of Government|autonomous|private organisations which are involved in bringing socio-economic transformation What is needed, at the moment, is a co-ordinated and integrated approach in economic development of the people|country.

We give below the names of some department|agencies whose functions are somewhat over-lapping .

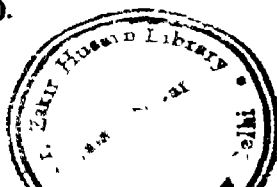
- Social Welfare Department	For providing old age pension etc.
- Zila Sainik Boards	For providing pensions etc. for a specific group of people.
- Harijan Kalyan Nigam	For arranging finance from the Banks for intending borrowers willing to start some productive venture.
- Backward Classes Kalyan Nigam	
- Economically weaker sections Kalyan Nigam.	
- District Industries Centre.	
- District Rural Development Agency.	(All these Departments/corporations performing similar functions).
Financial Institutions	
Co-operative Bank Commercial Bank Regional Rural Banks. Primary Land Development Banks. State Financial Corporation Khadi Village Industries Board	Borrowers are financed by Banks, Khadi Village Board, DIC, State Financial Corporation & some of the borrowors are able to manage loans on same security from more than one agency, resulting in national wastages.

District level committee

The goal of target-oriented economic development programme can be achieved in a better way if there is proper integration at local levels. For arranging proper co-ordination|integration, there should be one Nodal Agency at District Level.

In some States, District Level Planning and Development councils|committees have been constituted with a Minister or Deputy Commissioner as it Chairman. The idea has been appreciated by Economists| Planners. Such councils|committees should be constituted in every District.

Such type of councils|committees should be empowered to have full control on all the Departments| Agencies functioning in the district. The Committee may consist of the following members :

1. Minister or Deputy Commissioner Chairman.
2. Deputy Commissioner or Addl. DC Convennor Secretary.
3. Additional Deputy Commissioner.
4. Sub Divisional Magistrates.
5. Deputy Director Agriculture.
6. District Soil Conservation Officer.
7. District Forest Officer.
8. Chief Executive Officer, Fish Farmers Development Agency.
9. Deputy Director, Animal Production.
10. District Education Officer.
11. Chief Medical Officer.
12. District Town Planner.
13. Administrators, Municipal Committees.
14. District Managers of Nigams.
15. Housing.
16. Deputy Registrar, Co-operatives.
17. Block Developments & Panchayat Officers.
18. Supdt. Engineer, PWD (B&R).
19. Supdt. Engineer, Minor Irrigation Tube well Corpn.
20. Supdt. Engineer State Electricity Board.
21. Supdt. Engineer, Public Health.
22. General Manager, District Industries Centre

23. Supdt. Engineer. Irrigation Department
24. Lead Bank Officer.
25. Manager, Primary Land Development Bank.

The day-to-day task of plan formulation and implementation may be entrusted to a sub-committee consisting of 4-5 members nominated by the Committee. It should be headed by the Deputy Commissioner or Additional Deputy Commissioner.

The following points may be kept in view :

(i) The main function of the District Committee may be the formulation of the district plan, its periodical review and monitoring and to propose reappropriations between various schemes. All the field Functionaries should formulate village level/location-specific plans & then action plans should be put up before the District Committee/council for approval. This plan may be sent to the State planning and Development Committee for approval. A copy of the approved plan may then be sent to the planning Department and concerned administrative departmental heads The final decision would rest with the State Government.

(ii) Schemes of all Development Departments may be divided into two sectors :

(a) State Sector

(b) District Sector

State Government may specify the State Sector and district sector schemes By and large the criteria for determining whether the scheme may be included in State Sector or in the District Sector will depend on the location of a particular programme and also the areas which will be benefited by the specific programme.

The State Sector may include

— Generation and distribution of power
— Major and medium irrigation projects
— Major and medium industries
— Surveys, resarch and training programmes
— University education, professional and technical education
— State and National highways

District Sector may include the following schemes :

— Construction of administrative and residential buildings
— Primary and secondary education
— Minor irrigation, soil conservation
— Forestry.
— Fisheries
— Animal husbandry
— Warehousing.
— Community development programme.
— Welfare of Scheduled Castes and Backward classes
— Small scale industries
— District and village roads
— Health
— Water & sanitation

Urban development

Co-operation etc.

The District sector is really residuary sphere and whatever is not specifically included in the State Sector belongs to the district sector

(iii) As per the current practice, administrative departments may continue to formulate their plans for the State sector at the headquarters However, formulation of schemes for the district plan may be done by the District Committee.

(iv) About 70 per cent of the Annual Plan outlay may be reserved for schemes in the State sectors, the remaining 30 per cent being distributed among the districts The allocation between departments and districts may be done by the Planning Departments

(v) 90 per cent of the plan outlay earmarked for the district sector may be allocated between districts on the basis of set norms, adequate weightage being given to population and the level of development of a district The remaining 10 per cent may be reserved for special problems of the districts.

Index	Weightage
Population	50%
Population of Scheduled Caste/Scheduled Tribe	5%
No. of small farmers	5%
Backwardness in agriculture	5%
Backwardness in industry	5%
Backwardness in Roads	5%
Backwardness in electrification of villages	5%
Backwarndess in medical & health facilities	5%
No. of scarcity/problem villages (Drinking water facility)	5%

The following factors may also be given due weightage

1 Development stage of the District (in comparison to other districts)

2. Natural resources.
3. Un-employment
4. Area.
5. Literacy.
6. Revenue collection from the district|contribution to the State funds
7. Savings in the district.

(vi) The District plans approved by the District Committee may be referred to the State Planning Department Sectoral plans may be made available to the Heads of Departments|Secretaries.

(vii) District plans in accordance with the above principles may be scrutinized at the State Level by the planning Department and changes, if necessary, may be made if the resources position and the priorities so require

(viii) District plans may thereafter be finalized

(ix) The state plan would be prepared after consolidating the district plans and the schemes of the state sector.

For all the state Level Programmes, the Chairman of the District Councils should be a member of the State Level Councils

The complete District Level Action Plan should be prepared by the committee specifying preferences keeping in view the merits of each programme All these programmes will have to be put before the State Level committee and if any cut is imposed by the Government, less important programmes can be deleted. When the programmes are finally approved, State Government should provide funds to the District immediately and the District Level Council should make necessary efforts for its implementation

When the Chairman of all the District Level Committees will sit together at the State Level, their deliberations will definitely bring out the best not only for the district but also for the State as a whole

Thus, the District Level Committees should be involved in the Development of both infrastructural facilities as well as economic development of people living below the poverty line. The functions of various departments|agencies should be clearly defined and there should be no duplicacy or over-lapping

In order to make District Planning more realistic the following procedures must be adopted

Re-appropriation

Financial allocation which would be made available to the district must be utilized in the same district during the Five Year or Annual Plan period. The District Level Committe should be empowered to make local adjustments of budget allocations and the decision of the Committee should be accepted by all the implementing departments.

Release of grants

The State Government should release the grants directly to the implementing agencies|councils under intimation to the District committee|councils. It will cut down delays in release of funds.

Accountability of district officers

The State Government should specify that the **District Level Officers are accountable to the district** Level Committe|Councils. It will improve the performance of the local officials.

The departments|agencies which perform similar functions and could be merged in one department|agency|corporation, should be re-structured so that one department is responsible for all the problems|implementation etc.

It is suggested that there should be separate corporation looking after various functions, thus removing lot of duplicacies.

1	District Marketing Corpn.	Looking after sales & marketing of products.
2.	District Inputs Corpn.	Supply of inputs.
3.	District Training Corpn.	Providing training.
4.	District Survey & Monitoring	Survey of areas/beneficiaries and conducting evaluations studies.
5	Banking Corporation	For financing viable projects.
6.	District Credit Co-ordination Cell	For sponsoring of loan applications to various bank branches for avoiding double financing.

Planning at the district level

The Collector|member secretary of the District Level Council should be assisted by a District planning Officer in attending to the work of formulation, monitoring and evaluation of the District Plan. He should preferably be an IAS Officer or a very senior Officer from State Services having considerable experience in development work. The District planning Officer may also be assisted by :

- Research Officer . . . . . . One.
- Research Assistant . . . . . . two.
- Statistical assistant . . . . . . two.
- Auditor . . . . one.
- Clerks . . . . two.
- Steno-typists . . . . . . One.

Other sub-ordinate staff.

Since, the District Planning is mainly concerned with formulation, implementation, monitoring of the projects; the staffing pattern should be weighted in favour of statistical discipline.

It is felt that when the—

— plans will be formulated at District Level.

— projects will be prepared at District Level.

— funds will be available at District level.

— implementation of the programme will be at district level.

There is bound to be all-round progress, less misutilization and less delays.

To conclude, District Level Councils can become effective instruments of development if the deployment of funds by the State Government is in accordance with carefully prepared District Development Plans by the District Level Councils in association with the Development Agencies. ☐

(Continued from page 12)

Solan, Kangra, Sirmaur, Shimla, Kinnaur, Bilaspur, Lahaul-Spiti, Chamba, Mandi, Una, Hamirpur and Kullu.

Thus from the above analysis we find that there are widespread disparities prevailing in the state of Himachal Pradesh. The objective of successive plans has been reduction in the prevailing disparities in the state. For achieving the objective of balanced regional development, it is essential that Government departments and other agencies engaged in development works should substantially enhance the size of development programmes of the sector in a district which is relatively less developed in that respect those programmes should be adopted which may be helpful in solving the special problems of the district. In each district the nature of the problem and impediments to rapid development in particular fields have to be carefully studied and appropriate measures be devised for accelerated development. It is also to be ensured that potentialities of different districts are exploited to the maximum.

Water and sanitation programme

The targets under the International Water Supply and Sanitation Decade programme (1981—91) are being revised in view of the progress achieved during the first half of the decade It is suggested to cover 90 per cent of the urban and 85 per cent of the rural population in the country under the water supply programme and 50 per cent of the urban and five per cent of the rural population under the sanitation programme by the year 1991

Against the original target of 100 per cent coverage for both rural and urban water supply for the decade, the actual coverage as on March 31, 1985, would be 53.2 per cent for rural water supply and 81.2 per cent for urban water supply In case of sanitation, actual coverage during the period was 0.95 per cent for rural sanitation and 33 per cent for urban sanitation against the original decade targets of 20 per cent and 80 per cent of population coverage respectively.

It was anticipated that the capital cost of the decade programme, estimated at 1980 prices was Rs. 14,000 crore for the entire country and this figure had to be constantly updated in view of price escalation. ☐

Table 9

Sl. No.	Districts	Agricultural labour forces	Average yield of foodgrains	% of net irrigated area	% of villages electrified	No. of kers per lakh of population	Length of metalled and unmetalled road per 1000 Sq. Kms.	Medical institutions per lakh of population	Literacy percentage	Total Rank
1	2	3	4	5	6	7	8	9	10	11
1.	Bilaspur	10	10	8	5	4	2	8	4	49
2.	Chamba	6	2	7	7	9	9	4	12	56
3.	Hamirpur	8	12	12	6	10	1	12	1	62
4.	Kangra	2	7	2	4	7	6	11	3	43
5.	Kinnaur	3	9	2	1	11	11	1	8	46
6.	Kullu	12	6	9	8	6	10	5	9	65
7.	Lahaul-Spiti	1	1	1	12	12	12	2	10	51
8.	Mandi	11	8	6	11	2	7	9.5	7	61.5
9.	Shimla	7	4	10	5	5	8	3	5	47
10.	Sirmaur	9	3	4	2	3	5	6.5	11	43.5
11.	Solan	4	5	5	10	1	3	6.5	6	40.5
12.	Una	5	11	11	9	8	4	9.5	2	59.5

☐

How best to plan for the rural uplift

Jag Pal Singh

The author in this article suggests a novel unctional-mechanism to enable the rural people derive maximum benefit of their levelopmental efforts. He says officials vorking for the rural development are loyal o their senior officers than to the rural nasses. This generates the feeling in the ural people that the government only is esponsible for creating and maintaining community facilities and services in villages. Hence the need for this alternate functional-nechanism which will also help in initiating he process of decentralisation of political and conomic powers.

SYSTEM APPROACH TO ALLEVIATE OVERTY includes four steps They are . (i) to criterion for defining poverty line, (ii) to lay down methodology of identifying the families living be-w the poverty line, (iii) to estimate the quantity id quality of resources and technological, managerial d financial resources which are needed by indivi-tal family for achieving the desired objective, and v) to evolve investment plan and functional echanism for providing the required inputs. In the esent paper, all the four aspects have been discuss-in brief.

Poverty line criterion

Generally, poverty is defined in terms of consump-n expenditure which is adequate to meet the mini-um nutritional standard The Planning Commission has defined poverty line on the basis of the recommended nutritional requirements of 2400 calories per person per day for rural areas and 2100 calories per person per day for urban areas. On this basis, it has been estimated that at 1979-80 prices Rs. 76 per person per month in rural areas and Rs. 88 per person per month in urban areas are required to meet the minimum nutritional standard. Here a question arises : Are consumption need the only needs of a family ? The income which is adequate to meet the minimum nutritional standard cannot provide social, economical and political stability to the family. Savings and their expenditure on creating non-productive assets, such as house, house-hold goods etc. provide the social stability to the family. Investment capacity provides the economic stability to the family. Capacity to pay the tax to the government for area development programmes provides the political stability to the family. Consumption expenditure, savings, investment and the amount paid as a tax to the government are the components of turnover. In this way, for defining poverty line, turnover is the better parameter than that of consumption expenditure. It is true that there are many difficulties in finding out the common level of turnover for all the places and all the occupations The amount of turnover which can sustain all the abovesaid components differs from place to place and occupation to occupation and even scale to scale of one and the same activity. Secondly, In case of a rural family, to get information about the amount saved and paid as a tax to the government is a difficult task

The solution of the above problems demands the taking of some arbitrary estimates for the amount saved and paid as a tax into consideration and finding out the separate amount of turnover for every area and occupation It is observed that on an average, rural sector pays about ten per cent of the total turnover to

the government in terms of direct and indirect taxes. The savings are generally spent by the rural family for paying the debt, constructing a house, purchasing the household goods, meeting out the social obligations, etc. A rural family which starts economic activity with the loaned amount has to save about fifteen per cent of the total turnover for paying the loan instalment. With the help of these observations, the minimum nutritional standard and the primary data to be collected for estimating the total turnover, consumption expenditure and amount of investment, the level of turnover which can sustain all the four components can be estimated by using the following relationship.

$$\text{Level of Turnover in Rs} = \frac{\text{Consumption expenditure of the family of 5 members which is adequate for meeting the minimum nutritional standard}}{\text{Portion of turnover which is adequate to meet savings, reinvestment requirements and payment of tax to the government.}}$$

Identifying those below poverty line

The responsibility not only for identifying the families below the poverty line in the village but also for bringing them above the poverty line should be given to the villagers. Procedure of involving the villagers in the process has been discussed in detail under the heading—"functional-mechanism"

Estimation of the required inputs

Land, labour, capital, organisation and entrepreneur are the five factors of production. In the absence of other factors, labour alone is of no use. In the village, every family has certain quantity of land and labour for carrying on some economic activity. In case of self-employment, family has to bear the risk responsibility of an entrepreneur. In this way, capital and organisational inputs are to come to the villagers from outsider. Investment—plan and functional-mechanism (organisation-structure) are the tools in the hands of government through which it provides the desired inputs to every family. This poses the problem estimating the quantity and quality of monetary resources and organisational inputs required by individual family. As regards to the quantity and quality of organisational inputs, they have been discussed in detail under the heading—"functional-mechanism" The amount of monetary resources required by the family for raising the turnover up to the desired level may be estimated by using the following relationship

$$\text{Monetary resources in Rs.} = \text{Turnover} \times \text{Capital output ratio in rupees.}$$

Investment -pattern

Investment-pattern allocates the monetary resources for different activities and areas. At present top to bottom pattern of investment is followed. In this pattern of investment, the decision of allocation of the monetary resources for different activities and areas is taken at national or state level. In this situation, it is very difficult for a poor family to get the required amount of monetary resources for purchasing the desired inputs. In the absence of required inputs a large quantity of human, material and land resources available with the poor family remains unutilized and underutilized. To ensure that every family gets the required amount of monetary resources, investment-plan for every family living in the area has to be prepared first. Based on these plans, the investment plan for the village|cluster of villages|block|district|state| nation is to be worked out. In other words to achieve the objective of removal of poverty bottom to top considering family as the smallest unit and nation as the largest unit has to be followed. With the help of the relationship given above it is easy to prepare the investment-plan for the family

Functional-mechanism

In raising the turnover, technological, financial and managerial expertises play a vital role. Monetary resources help only mobilising the inputs, whereas these expertises help the rural poor in exploiting the mobilized inputs. In the absence of these expertises, the rural poor cannot derive due benefit of their efforts in this age of exchange and the throat-cut competition. In the present organisational-structure, benefits and losses to the government officials who are working for the rural poor are sanctioned by their seniors. Their promotion depend on the report written by their seniors sitting at higher level. So they are loyal to their seniors rather than to the work assigned to them. In this situation, the villagers have no control on those working for them. This has created the thinking in rural masses that it is the responsibility of the government to create and maintain the community facilities and services in the villages. Hence, the active participation of the local people in developmental activities becomes a dream. This brings out the need of an alternate functional-mechanism

PTS centres in villages

The proposed functional-mechanism should help in creating adequate employment opportunities and in creating the trade in favour of rural sector as well as in establishing the assets so as to obtain the self-generating economy for the area. For the effective functioning of such a functional-mechanism, the rural families should have direct access to it and they should be able to participate actively in all the activities organised by it. Various studies have pointed out that block unit is very large for this purpose. This can be achieved if instead of a block a cluster of 10-15

villages with a total population about 10,000 is formed as a grassroot operating unit within the block. To reach the benefits to the poor families and to manage the activities successfully, a Production-cum-Training-cum-Service (PTS) Centre should be established at a Centre village of the cluster It is to be ensured that 50-100 acres of land is available for every PTS Centre Every PTS Centre will have a branch of Bank and Four cells : (i) Planning-cum-Information Cell (ii) Production-cum-Training Cell, (iii) Godown-cum-Distribution Cell; and (iv) Service Cell. The emphasis should be on to ensure the active participation of the local people and beneficiaries in planning, organising and controlling all the activities The major activities of such a PTS Centre will be as under

1. To organise and involve the local people in identifying the unutilized and underutilized human, material and land resources available at each family level and at the area level
2. Based on the resources available and that can be arranged on priority basis, to plan economically viable activities for different families of the area with their consultation In accordance with the family plans the PTS Centre will prepare the area development plan under the guidance of village people. Based on these plans investment-plan for the cluster will be prepared
3. To organise suitable production activities at the PTS Centre and through them impart functional and entrepreneural training and demonstrate the benefits of the use of improved technologies In case of agricultural and animal husbandry activities, the PTS Centre will produce High Yielding varities of seeds for all the crops undertaken in the area and High Yielding Milch Cattles and other animals.
4. To guide and supervise the producers at field level in all the villages of the cluster to get the quality produce.
5. To control the quality of produces
6. To manage the marketing operation in respect of the purchases of desired inputs and sales of finished goods

The concept of functional mechanism has been detailed out in previous paragraphs. Such a functional mechanism will have to have certain organisational structure To achieve the desired objective, the organisational structure should be qualitatively and quantitatively capable to run the diversified activities successfully. To organise the activities of different nature, technological, financial and managerial expertises available at block level are inadequate. Taking this observations in view, an organisational structure for a cluster is proposed below

Proposed organisational structure

1. The State Government will issue the guidelines for demarcating clusters and will empower the committee consisting of the Chairman of Block Samiti, Block Development Officer of the concerned block and the representative of District Lead Bank of the concerned district to demarcate different clusters within the Block.
2. The State Government will appoint one of the technical institutions working in the area, such as Polytechnic, Engineering Institutions, Agricultural University, Research Laboratory etc. as a mother institution of the cluster This mother institute will render full time services of one of its senior faculty (Professor|Assistant Professor) as Chief Coordinator of the PTS Centre
3. For every 200 families, one Rural Manager of the rank of Junior Engineer|Assistant Project Officer|Project Officer will be deputed from existing department of the district In a cluster, persons for different disciplines should be deputed so that a team of experts deals in all development aspects is available These experts will be called as Rural Managers.
4. The Rural Managers will organise the beneficiaries according to their activities. This group of beneficiaries will be called as Activity Group The members of every Activity Group of the village will elect their representative. In the Activity Group meeting, this representative will act as a Chairman of the Group The representatives of different Activity Groups at village level will form a village committees and at cluster level they will form Activity Committees The members of the Village Committee will elect their Chairman out of them One of the Rural Managers will act as a Secretary-cum-Treasurer of the Village Committee.
5. The PTS Centre will be administered by an Administrative Committee having representatives of different Activity Committees The Chief-Coordinator, one of the Rural Managers and the Branch Manager of the Bank which will be established at PTS Centre will act as Chairman, Secretary and Treasurer respectively of the Administrative Committee. The representatives of Different Activity Committees will elect one Co-Chairman of the Committee. This Administrative Committee will have the powers to recommend transfer|suspension| termination from services of any of the

Rural Managers and Chief-Coordinator to the parent department of the concerned staff member. Based on this discussion organisational-structure has been worked out for a cluster which is given in the attached Chart.

Operational-mechanism

1 The Cluster Demarcation Committee with the consultation of the local people will demarcate different clusters within the block and on the basis of the information available with the Block Development Organisation and District level Statistical Officer, this Committee will prepare a detail report in respect of socio-economic aspects of the Cluster This report will be made available to the mother institution of the cluster.

2 On the basis of different reports submitted by the cluster Demarcation Committees, the mother institution will organise training courses for the Chief-Coordinators and for the Rural Managers separately.

3 The Chief-Coordinator and his team will organise the people and involve them in conducting resource survey of individual family as well as of every village of the cluster. They will estimate the quantity and quality of unutilized and underutilized human, material and land resources available with each family and in each village of the cluster. Based on the resources available and the resources that can be arranged on priority basis, the PTS Centre with the consultation of individual family will prepare investment plan for every family of every village and finally will estimate the quantity and quality of different inputs required for implementing the investment plans devised.

4 In accordance with the investment plans of different families of the village, the Village Committee will guide the Rural Managers to prepare the area development plan for the village

5 All the investment plans of different families and different villages worked out will then be put up to the Administrative Committee for approval The approved family-plans will be submitted to the Branch of Bank for examining the economic viability of these plans and to sanction the loan for the economically viable plans. The families which will get loan will pledge their assets to the bank.

6. The village-development plans approved by the Administrative Committee will be submitted to the District-level Authorities to get the funds for implementing the same.

7. On behalf of the village committee, the PTS Centre will receive the amount sanctioned by the district authorities and according to the development-plans approved, the PTS Centre will create and maintain the desired facilities and services in the villages.

8 On behalf of individual family, the Branch of Bank will make the required amount of monetary resources available to the PTS Centre The PTS Centre will manage the necessary material inputs required by individual family of the cluster and will organise Production and Training activities at the PTS Centre and in different villages for imparting the functional and entrepreneural training and for demonstrating the benefits of the use of improved technologies. The expertises involved in the PTS Centre will supervise and guide the individual producer at field level to get the quality produce

9 The PTS Centre will collect|receive the goods from individual family and will maintain the godown for them. All the producers including large|medium|small|cottage scale industrial units working in the cluster will be directed by the government to bring their produce to the PTS Centre for testing the quality of the produce and further for distribution through Fair Price Shop. In this situation, it will become easy for the PTS Centre to realize the loan instalment and its service charges from individual family of the cluster

The proposed organisational-structure though is linked with the existing government-structure will have a great autonomy All the funds allocated for the cluster will be made available to the Administrative Committee of the cluster through the bank. This Committee will prepare the plans and will also make arrangement for their execution through the PTS Centre The PTS Centre will also organise the activities as per demand of the village Committee. The PTS Centre will have a social-cum-commercial arm in every 200 families in the village and, therefore, the benefits are likely to reach every family. The entire structure will have the control of the local people as regards to the decision making process while managerial technological and financial control will be through the technical institution and lead bank

The proposed system of planning prepares sufficient grounds for developing the incentive

(Continued on page 28)

Kalpakkam fast breeder reactor—symbol of India's maturity

O. P. Sabherwal

The fast breeder reactor at Kalpakkam, Tamilnadu, which was dedicated to the nation by the Prime Minister, Shri Rajiv Gandhi on December 16, 1985, has placed India in the rank of six other advance countries of the world using this sophisticated technique. The achievement, the author says, is of special import for India as it developed the FBR with its own capabilities. This demonstrates that nuclear power programme of India has reached a stage of maturity.

December 16, 1985 was a day of great significance n India's quest to harness the power of the atom : and this is so because this country can now be counted with the top six nuclear and advanced industrial nations of the world, for having commissioned a fast breeder reactor with its own capabilities. Dedication to the nation of the fast breeder test reactor and the second unit of Madras Atomic Power Station as well as renaming of the Reactor Research Centre after Mrs. Indira Gandhi at Kalpakkam by the Prime Minister, Mr. Rajiv Gandhi places the focus on a triple thrust by India in its nuclear quest. The country has been launched on the road to abundant and commercially viable nuclear power generation. Secondly, it is a breakthrough of special import for this country in the realm of fast breeders; and, thirdly, India has now been placed on the threshold of higher echelons of science and advanced technologies.

A stage of maturity

Madras Atomic Power Station Two, that is MAPS II demonstrates clearly that the nuclear power programme of this country has reached a stage of maturity. MAPS unit one was the first reactor which Indian scientists were to construct entirely indigenously. It was a test case for India's nuclear scientists and engineers—a test of capability to design, construct, manufacture, commission and operate a nuclear power plant entirely by themselves. They emerged with flying colours, and the operations of MAPS I, commissioned in July 1983, made India the first developing country in the world with such a capability. The commissioning of the second unit of MAPS consolidates this achievement.

The dedication to the nation of MAPS II by the the Prime Minister, Mr. Rajiv Gandhi in a way gave the green signal for a sound launching of the programme for achieving 10,000 megawatts of electricity through nuclear power generation by the year 2000 as envisaged in the fifteen year nuclear programme of the nation.

Improved design

The urgency of developing the country's electric power generation reinforces the importance of MAPS II. The project shows that Indian technology in this sphere is vibrant and developing. And, the back-up industrial support needed for construction of the chain of nuclear power projects in the decades ahead is

being built with meticulous care and dedication. Between the two atomic reactors at Rajasthan and the MAPS reactors there has been no stagnation but constant technological advance. This is shown in the improved designs and construction of several components in the MAPS reactors as compared to the Canadian-designed reactors at the Rajasthan atomic power plant

Two other facets deserve to be noted; first, the capacity for quick absorption and application of higher technologies by India's nuclear establishment, and, secondly, rapid rate of indigenisation achieved in the successive nuclear power plants in India. About the extent of indigenisation and the capacity to fabricate the complex components of MAPS reactors in India, it has to be noted that the level acquired by the second reactor at MAPS has reached 90 per cent. Only some raw materials and inputs and a few components have been imported

The expertise gained

As for the other facet, the most important point is the great expertise attained by India's nuclear specialists, both scientists and engineers Three generations of nuclear expertise have been added since the days of Homi Bhabha, the great Titan who laid the foundation of India's nuclear energy programme. This has been shown in a striking way at the time of the MAPS second unit. It was noted that at the initial criticality stage of MAPS II the start-up operations were in the hands of young nuclear specialists in their twenties and thirties

Advance in nuclear programme

The dedication to the nation of the fast breeder test reactor at Kalpakkam underlines the second major thrust of advance in India's nuclear programme. The breakthrough achieved in the sphere of fast breeders marks the commencement of a second, and a higher phase of India's nuclear power strategy. This opens a new long-term vista with great prospects. The Fast Breeder Reactor went critcal on October 18 and its operations in the two months since then have been almost flawles and this has provided unbounded confidence to India's nuclear specialists

One of the biggest challenges faced by our scientists while undertaking its construction was the creation and development of fuel required for liquid metal-cooled fast breeder reactors such as the one at Kalpakkam. The mixed carbide fuel based on enriched plutonium-239 and natural uranium, prepared by Indian scientists is the first of its kind in the world. It has been proved to be entirely a success in the operations of the last two months of the fast breeder test reactor. According to our scientists, the plutonium-based mixed carbide fuel they have developed shows better performance than the enriched uranium based mixed oxide fuel used by France and other Western nuclear nations.

Manifold power generation

The significance of the fast breeders in India's plans is immense. In the first place, its great impact will be in the economies of power geneation. For, fast breeders not only generate power but do much more. They continuously create or breed for more nuclear fuel than they consume. The fast breeder test reactor itself will in a few years breed enough fuel not only for recharging itself but also provide a start-up charge for another full size fast breeder reactor Secondly, fast breeders use the power potential of uranium far more exhaustively than ordinary atomic reactors. In ordinary reactors, only the fissile atoms of uranium, which are just a few in a thousand, provide the chain reaction, but in fast breeders about 70 per cent of the uranium atoms, even the non-fissilee U-238, generate energy by becoming part of the chain reaction. Thirdly, the fast breeders open up the prospect of using India's vast reserves of thorium in the next generation of fast breeder reactors.

The Reactor Research Centre, now renamed Indira Gandhi Atomic Research Centre is the base on which the recent advances in nuclear technology have been accomplised in India. This opens a great vision of the future for our country. □

(Courtesy . Spotlight . AIR)

Work, food and nutrition for the poor

The whole programme of work, food and nutrition including additionally subsidised foodgrains by the different Department of the Government of India for the tribals, nursing and lactating mothers and children under various schemes such as National Rural Landless Employment Guarantee Programme (by the Department of Rural Development), in the form of Social Forestry, Integrated Tribal Development Programme (Ministry of Welfare), Integrated Child Development Scheme and Welfare of Nursing Mothers (Department of Women's Welfare) is being looked after by the Union Ministry of Food and Civil Supplies.

The whole programme is being coordinated and implemented by the Ministry of Food and Civil Supplies through the Food Corporation of India. Public Distribution System and Large Areas Multipurpose Cooperative Societies in the Integrated Tribal Development Programme areas for providing additional work, gainful employment, purchasing power and nutrition as well as creating permanent assets for the community. □

Indigenising fast breeder reactors

Dr. Raja Ramanna

The noted nuclear scientist Dr. Ramanna, says that with the commissioning of 40 MW Fast Breeder Test Reactor at Kalpakkam, India has entered the second phase of nuclear power programme. He commends participation of Indian industry in the indigenisation of the FBRs with the result indigenous competence of FBRs now is 78%. He calls upon the industry to come forward in a big way now to undertake manufacturing, installation and commissioning of the prototype FBRs of 500 MW.

THE FAST BREEDER TEST REACTOR (FBTR) with a design capacity of 40 MW thermal and 13 MW electrical attained its first criticality on October 18, 1985 at Kalpakkam in Tamil Nadu. India is the first developing country and the seventh in the world to operate Fast Breeder Reactor (FBR). The commissioning of FBTR marks the commencement of the second phase of our nuclear power programme. It is very significant that the construction and commissioning of this advanced reactor has been mostly an indigenous effort. The design and fabrication of a new plutonium based fuel for the reactor, the harnessing of sodium technology and the manufacture of most of the critical components within the country are among the major achievements.

What is FBR?

The nuclear chain reaction in the uranium fuel in a thermal reactor is sustained by slowing down the neutrons by a moderator. On the other hand, in an FBR, the chain reaction is sustained by FAST neutrons. When fission is induced by fast neutrons, the number of neutrons released per fission is more compared to that in thermal reactor. The extra neutrons are available for absorption in Uranium-238 to transform it to fissile Plutonium-239.

In a nuclear reactor (fuelled with Uranium or plutonium and uranium) heat is produced through the fission of U-235 and Pu-239 nuclei, and at the same time the non-fissile Uranium-238 gets converted to plutonium through neutron capture and radioactive decay. The efficiency of the conversion is judged by the ratio of fresh fuel produced to fuel consumed. In a Pressurised Heavy Water Reactor (PHWR) this ratio is about 0.8 whereas it is more than one (1 2 to 1 3) in a typical large size FBR on account of the better neutron yield and economy. Thus, the fast breeder reactor breeds more fuel than it consumes in producing electricity Through the operation of FBRs, the total energy potential in natural uranium can be harnessed much better. In a thermal reactor typcally only 1-2 per cent of the natural uranium is utilised whereas in FBRs the utilisation is increased 60 to 70 times

In the construction of an FBR, it is necessary to exclude all materials of low atomic weight which slow down the neutrons. Therefore, water cannot be used as a coolant. Considering the nuclear and heat transfer properties of various possible coolants, sodium has been universally accepted as the coolant of FBRs. Sodium melts at 98°C and boils at 880°C at atmospheric pressure. Therefore, to get a high coolant outlet temperature from reactor the sodium is not required to be pressurised. The heat generated in an FBR core is removed by primary sodium, which in turn transfers it to secondary sodium. The secondary sodium transfers heat to

Dr Raja Ramanna, Chairman, Atomic Energy Commission, delivered the 20th Sri Ram Memorial lecture in New Delhi on November 1, 1985.

water (in the steam generator) to provide high tem-perature, high pressure steam. The temperature of the primary sodium entering the reactor is typically about 380°C to 400°C, and it leaves at 530°C to 550°C. The steam conditions are in general, 408°C to 500°C and 160 to 180 Kg|Cm. Due to the higher steam temperature and pressure, the efficiency of converting heat into electricity is typically about 40 per cent in FBRs compared to 30 to 32 per cent in water cooled reactors. Due to the high thermal efficiency of FBRs the number of atoms fissioned to produce a unit of electricity is less compared to water reactors. Similarly the heat rejected to the environment is also less.

It is interesting to recall that the first nuclear electricity was produced in 1951, from a fast breeder reactor FBR-1, USA. Development of FBR has been actively pursued in USA, USSR, UK, France, Germany and Japan. Presently, 12 FBRs are operating, 3 are under construction and 5 are in advanced stage of planning.

In all more than 170 reactor-years of FBR operating experience has been accumulated so far. The radioactivity released to the atmosphere and the radiation dose received by the operating personnel in FBRs have been much less compared to the water cooled reactors. The operating experience, theoretical analysis and experiments carried out so far indicate that fast breeder reactors are as safe as water reactors, and in certain respects are even more safe.

Why we need FBRs ?

The production of electricity in India in 1950 was a meagre 230 MW with a per capita annual consumption of 18 KWh. Substantial increase in the production of electricity was considered necessary to improve the living standard of the masses. India has made considerable progress by allotting high priority for the power sector and the installed capacity in 1985 is about 40,000 MW(e) with a per capita annual consumption of about 200 KWh. Such a massive growth in the power production has been achieved by installing a large number of coalfired thermal and hydel power stations. To provide a reasonable standard of living for a population of about 1 billion (as provided by the early 21st century), the installed electrical capacity will have to be increased to more than 300,000 to 400,000 MW.

Now, let us have a look at our available energy resources. The country has about 110 billion tonnes of coal in all the three categories viz. proven, indicated and inferred. This gives a per capita coal availability of about 100 tonnes. If the future electricity generation is predominantly based on coal, it is likely to be exhausted by the middle of the next century. Considering that coal is needed for other important applications in chemical and metallurgical industries and also causes large pollution, it is prudent to minimise its use for power production. India's hydel potential is estimated at about 75,000 MW and so far about 13,000 MW (17 per cent) has been exploited. The hydel potential is unevenly distributed in the Himalayas in the northern and north-eastern regions. The low level of utilisation is basically due to complex geology, difficult terrain conditions, inadequate regional growth, long gestation periods and interstate disputes. The hydro-electricity also suffers due to the vagaries of monsoon.

The dwindling oil resource

India's oil and gas resources can be considered as small with reference to its energy needs. The present estimates of oil and gas are about 0.6 and 1.5 billion tonnes of coal equivalent respectively. In spite of the impressive increase in the indigenous production of oil in the recent years, the country imports about 40 per cent of its oil requirements which is considerable drain on its foreign exchange. With the presently planned production rates, the currently recoverable reserves are likely to be exhausted by the turn of the century. Therefore, the scarce oil resource has to be used most efficiently and mainly in the transport sector.

The recoverable energies from the wind, biomass, geothermal, tidal and ocean thermal are very limited and can not be considered as large energy resources.

The uranium resource

The uranium resources which form the base for nuclear energy programme are estimated at about 70,000 tonnes. Utilising the natural uranium in the pressurised heavy water reactors (PHWR), a series of which are now under construction, we can sustain a capacity of about 10 to 15 GWe for a period of thirty years. However, if the plutonium and depleted uranium discharged from the PHWRs are used in the FBRs, an installed capacity as high as 300 to 350 GWe can be reached by the second half of the next century. Considering the demand for energy in coming decades and the energy resources available within the country, the crucial role for nuclear energy can be recognised in the total energy scenario.

The nuclear energy programme in India has been visualised to grow in three phases :

Phase I.—Construction of natural uranium fuelled, heavy water moderated and heavy water cooled thermal reactors producing electricity and plutonium.

Phase II.—Construction of FBRs which utilise plutonium and depleted uranium, the by-products of the Phase-I reactors. FBRs produce more fuel than they consume while supplying electricity.

Phase III.—Use of thorium by converting it to U.

The long-term perspective

The country is planning to instal 10 GWe of nuclear capacity by constructing 235 and 500 MW(e)

PHWRs in the coming 15 years. Six reactors are already under operation at Tarapur, Rajasthan and Kalpakkam. Construction of eight reactors is under progress, two each at Narora, Kakrapara, Kaiga and Rajasthan. With the construction and successful commissioning of the two units of MAPP (Kalpakkam), which is totally an indigenous effort, the technology can be considered to have matured with respect to the PHWRs in India. Heavy water is being produced within the country. All the fuel is being fabricated at the Nuclear Fuel Complex, Hyderabad Achieving the target of 10 GWe by the year 2000 (which would constitute 10 per cent of the electricity generated at that time) is a matter of mobilising the financial resources, industrial capacity and managerial skills.

The reprocessing of the irradiated fuel is essential to separate out the radioactive fission products and to recover plutonium and the depleted uranium, India had made an early start in this field by constructing a 30 t|a capacity reprocessing plant at Trombay to reprocess uranium fuel from research reactors Based on the experience of the Trombay Plant, a power reactor-fuel reprocessing plant with a capacity of 100 t|a has been constructed at Tarapur to reprocess the fuel from TPAS and RAPS The plant is in operation since 1983 The third reprocessing plant of 100 t|a capacity, at Kalpakkam is under construction to reprocess fuel from MAPS A Waste immobilisation plant which converts high level radioactive waste into glass has been made operational at Tarapur, and India is one of the few countries which have mastered this technology With this experience, India has the capacity of the total fuel cycle, i.e., from exploring and mining of uranium, fabrication of a variety of nuclear fuel elements, design, construction and operation of PHWRs, production of heavy water ; and reprocessing of the irradiated fuel to recover the plutonium for use in FBRs, and radio-active waste management Nuclear technology can thus be said to have now reached a commercial stage.

Reactor research centre

The important role of FBRs was recognised very early in the Indian atomic energy programme and studies on FBRs had been initiated in BARC in the 60s The Reactor Research Centre was established at Kalpakkam to develop the indigenous capability in the field of FBRs. The main facility at this Centre is the FBTR, sodium-cooled, loop-type, plutonium-fuelled, power generating plant The other facilities at RRC include basic research facilities in the field of Materials of interest to FBRs and a Reactor Engineering Laboratory to confirm the equipment design by carrying out tests in air, water and sodium The chemistry of fuel and sodium is investigated in the Radiochemistry Laboratory and the technology of reprocessing fast reactor fuel is being developed in the Reprocessing Laboratory. FBTR is based on the design of the RAPSODIE reactor in France which was operated successfully during 1967—83. The basic design of the French reactor has been modified in order to indigenise the fuel and blanket materials, increase safety, reduce the operational problems and the capital cost of the reactor. The fuel used in FBTR is a mixed carbide of plutonium and natural uranium, the proportion of the latter being 30 per cent Such a composition is being used for the first time in the world. The technology for the fabrication of the fuel was developed at the Radio Metallurgy Division of BARC. Similar size reactors in other countries use enriched uranium in the form of metal or enriched uranium and plutonium oxide fuel. The development of mixed carbide fuel was carried out due to non-availability of enriched uranium. The carbide fuel has higher breeding ratio due to its higher density and thermal conductivity. Steam generation have been added to FBTR in order to produce steam and to run the turbine connected to the grid Such a provision was not existing in the French reactor The experience of a complete plant will be very useful in the design of a prototype fast breeder reactor.

150 tonnes of sodium was required for FBTR The sodium has been manufactured indigenously and was purified at RRC to the nuclear grade The permissible impurity limits in sodium are only a few parts per million of oxygen, carbon, hydrogen and calcium A special purification rig was designed and built in the Reactor Engineering Laboratory and the sodium was purified by filtering and cold trapping to the required specification.

The manufacturing specification for the FBTR components are much stricter than the thermal reactors due to high operating temperatures, sodium coolant and fast neutron exposure Thanks to the low operating pressure with sodium, the stainless steel parts are relatively thin-walled, control of dimensions during welding is one of the challenging tasks in manufacturing of the components. Though a base of nuclear quality awareness was created with the construction of PHWRs, the stringent requirements and lack of experience in the manufacture of thin stainless steel parts necessitated transfer of manufacturing technology to the Indian industries from their counter-parts in France

Indigenisation

The emphasis during the construction of FBTR was on maximum indigenisation Initially the Indian industry was hesitant in accepting the manufacture of the components on account of the high quality standards, prototype nature of the manufacture and the likely finanacial risks. However, with persuasion, they have responded splendidly. The key components, namely the reactor vessel rotating plugs, control

and drive mechanisms, sodium pumps, intermediate heat exchangers, steam generators, fuel generators, fuel handling machines, computers, control and instrumentation packages, Ward Leonard drives and core sub-assemblies have all been manufactured within the country. The manufacture of stainless steel components require separate areas for the fabrication, nuclear clean halls for assembly, and surface treatment facility for cleaning of the components. The welders had to undergo rigorous training in order to produce stringent radiographic quality welds

The important achievements of the Indian industry include : special forming operations like the pull outs, 'Y' bend, rolling of shells to stringent dimensional tolerances, accurate machining of large size flanges, plates and assemblies, helium leak testing and optical alignment checks or the critical components, a large number of test coupons were provided to check the properties by destructive testing.

The main industries which participated in the construction of FBTR are : Bharat Heavy Electrical Limited, Hyderabad, Tiruchi and Walchand Industries Limited, Triveni, Structural Limited, Engineering Construction Corportion, Heavy Engineering Corporation, Alkali Metals Limited, Kirloskar Brothers Limited, Machine Tool Aids and Reconditioning, Mukand Iron and Steel Works, Electronics Corporation of India, Central Workshops at BARC and RRC. The indigenous content of FBTR is as high as 78 per cent This success has been possible mainly due to the active participation of the industries indicated above

Proto-type FBR

The next step after FBTR is to design and construct a Proto-type Fast Breeder Reactor (PFBR) of 500 MW(e) capacity. 500 MW(e) size of the reactor has been selected to match the size of coal fixed thermal power stations and PHWRs. Technology developed in the industry for the conventional equipment like TG set, condensers, switchgear, transformers etc. can be used for PFBR without any special efforts for the design and development The 500 MW(e) will also reduce the specific capital cost and at least a few such reactors can be constructed before going in for the next size reactor in the range of 1000 to 1200 MW(e)

Presently the Indian industry is participating only in the manufacturing proper of the components with the free issue materials supplied by the Department of Atomic Energy Transportation of the components, site installation, commissioning and servicing of the components during operation is done by the Department of Atomic Energy In the future, we expect more participation from the industry ; apart from just manufacturing the components, to include also procurement of quality materials and propriety items available within the country, transportation, site installations, commissioning and servicing. While detailed design of the nuclear components by the industry may take some time, an early attempt should be made by the industry to collaborate with the engineers from the Department of Atomic Energy in this field. Most of the structural raw materials for the nuclear components are still being imported and constituting the main foreign exchange component of our programme The material manufacturers should now come forward to supply quality material for the atomic plants.

On the part of Department of Atomic Energy, the complete design of the fuel cycle, its R&D, chemistry and technology of sodium, conceptual and detailed design of nuclear steam supply components, R&D in the field of metallurgy, reactor engineering and reprocessing will be mostly carried out at the Reactor Research Centre, Kalpakkam

Let home industries participate in a big way !

Conclusion With the commissioning of FBTR, India has reached the beginning of the second phase of the nuclear power programme, for construction of FBRs which will produce more fuel than they consume, while supplying electricity to the national grid The FBTR construction experience has given an insight into the design of sodium cooled fast breeder reactor to Indian scientists and engineers Indian industry has participated on a large scale which has resulted in considerable indigenisation in the manufacturing of components This experience should be utilised for the design and construction of future fast reactors.

Designing of a proto-type fast breeder reactor has already started at RRC, and actions are being taken for carrying out R&D in the field of metallurgy, reactor engineering, fuel reprocessing and safety. It is a great opportunity for industries to come forward in a big way to undertake challenging tasks in the manufacturing, installation and commissioning of PFBR components and systems, targeted for completion by the year 2000 □

(Continued from page 22)

based production system and exploitation free distribution system It helps in feeding the money requirement of individual family to the national planning, in allocating the money as per requirement of individual family and area, in channalising the allocated money from national level to grassroot level It also helps in initiating the process of decentralisation of political and economic powers, in making individual family as a self-sufficient unit and ensures the active participation of local people firstly in economic activities and further in creating and maintaining the community development facilities in the villages □

The Japanese miracle

(Part 2)

Shibdas Burman

this concluding part the author takes a ok on Japan's research and development al, regulation of import of technology, and e future of Japan starting in the Tsukuba ience city. In the technology cooperation tween U S and Japan, the Japanese orkers gain experience in making products ich generate more social wealth than does venting them or assembling and selling em. Both in US and in Japan it is strong chnology that drives strong economics erein lies a lesson for India.

N THE PREVIOUS PART, we have traced the gin and the development of Japan's industrial policy inst the background of events happening since middle of the last century. We have also had the ortunity of studying the thrust of the Japanese ernment in its current industrial policy objectives two areas, namely, the structurally-depressed that declining industries and the new growth industries this part we take a look on her research and deve-ment goal, technology import and how the Japanese kers generate social wealth by concentrating on complex manufacturing process based on borrow-technology

Research & Development

According to the survey announced by the Statistics eau of the Prime Minister's Office, the nation's al expenditure for research and development (both government and private) during 1983-84 ran upto 7,200 billion yen, of which the government paid about 1,720 billion yen. The total amount represents 2.58 per cent of the GNP. The Council for Science and Technology recommended recently that government and industry should work together over the next 10 years to raise the investment level to 3.5 per cent of the GNP On 1-4-1984 the country had about 370,000 researchers.

In contrast to Japan, the government and the private sector almost equally share R&D expenditure in U S., U K , West Germany and France. In India the government shares almost three-fourth of R&D expenditure, leaving only about a quarter of the sum shared by the industrial sector In 1982-83, India's expenditure on R&D and related Science and Technology activities was Rs 1,237.56 crores, which was 0 85 per cent of the GNP. The technology balance of payments for Japan is still in heavy deficit, with payments 1 8 times higher than earnings. However, Japan is emerging as a powerful R&D entity. Martin Goland writing in *Science*, 20 January 1984 says that if U S adopts protectionist attitudes on technology transfer toward Japan and other countries, the ultimate loss to U.S will certainly equal theirs, and overall progress of science and technology will be retarded

There has been a drift away from the old, labour-intensive technologies to the new, knowledge-intensive ones, such as, semiconductors, which depend for growth, on a continuous flow of information from researchers. The rapid growth of these new industries make the Japanese firms to take on the burden of pure research; they cannot wait for the government or the universities to do their research for them An important characteristics of higher education in the country is the high percentage (21 per cent in 1975, totalling 330,000) of undergraduate students belonging to the faculty of engineering In contrast in U K for

Views expressed in this article are those of the author

instance only 15 per cent of such students were specialising in engineering. The high percentage of engineers in Japan help her in achieving innovations, causing envy to the rest of the world.

Table I shows the distribution of the number of persons with science degrees in U.S., Japan, U.K. and W. Germany. Given the bias towards engineering, it is not surprising that most graduates quickly make their way into industrial companies

In a 419 page White Paper, entitled "Aiming at the creation of new technology for the 21st century" by the Science and Technology Agency, the Japanese government has called for "more basic research and more creativity" in the nation's scientific research programmes. The percentage of funds going to basic research in Japan is on the decline-down to 14.6 per cent in 1982 from 24 per cent a decade ago-despite endless government calls for more attention to basic research (Alun Anderson, *Nature*, 17 January 1985).

The general suggestions made in the report to improve basic research performance are· funds to cultivate young and talented researchers, increased exchange between the universities, industry and the government research institutes, greater investment in the equipment and facilities necessary to back up advanced research and increased investment in personnel at the universities and national research in institutes Alun Anderson writes, "If present government policy measures are anything to go by, however, the result will be an increasing basic research and role for private industry. Increased tax incentives for industry to perform basic research and joint research with industry at government research institutes are measures likely to be enacted before long, rather than increased funds for the universities"

Looking to the future

Looking to the future Keiichi Konaga, vice minister of MITI thinks that the 1980s is the time to nurture the buds of technologies that will blossom in the next century The technologies in question are electronics, biotechnology and new materials. Konaga enumerates MITI's plan in the following words (*New Scientist*, 21 March 1985)

> "This October, MITI will establish a centre to promote basic technology research Its job will be to allocate conditional, interest-free loans. If the research is successful, then the company will have to return the loan with interest. If it fails, then it won't have to return the money By providing the private sector with risk money, we will be able to promote basic and applied research in industry."

Time changes, so changes the famed management policy The ceramics company NGK Spark Plugs has decided to overcome the rigidity of the seniority sys tem, by designating bright researchers, regardless c age, as "key persons". The idea of lifelong employ ment with one company is changing because it hin ders career development. The increasing recruitmen of researchers to stimulate the home-grown minds i yet another change that is taking place. The Japanes companies have long been sending their best peopl overseas usually for two years. They would now lik to see more foreign scientists come to Japan and wor with them

The industries which have a future are the ones wit a knowledge-intensive industrial structure. A 197 law, to last until 1986, provides the computer indus try with low interest Japan Development Bank (JDB loans for R&D and capital development, alongwit special accelerated depreciation of equipment. Th fifth-generation computer research also enjoys low interest financial aid from MITI In order to encou age software development, a law initated by MI allows upto 50 per cent tax exemption of revenue from general software sales if the funds are used fc further R&D on general software.

It is reported that "in Japan, equipment can be d preciated in 6 to 8 years on average, compared to to 11 years, until 1981, in the United States. Accel rated depreciation allows 25 to 30 per cent write o in the first year, special depreciations, for specific equipment in specified industries, allow another 25 t 33 per cent in the first year (for a total depreciatio of 125 to 133 per cent of cost) At a 50 per cent ta rate, this allows reclaiming 25 per cent of cost in th first year " Prof Fumio Kodama of Saitama Universit believes that the "creative fusion" of existing techn logies such as electronics and mechanics, or foo processing, has become important to technologic progress than the invention of radically new produc involving only one technology such as the transisto According to Kodama, good company-to-company r lations are a condition for success in technology f sion, and also R&D diversification within the san organisation The highly innovative Japanese compa ies often spend a great amount of research funds ou side their main field of manufacturing activity Th sort of spending is known as "cross investment whereby, for example, an electronics producer inves funds for new-materials research

The West German companies show a weaker te dency to invest on R&D outside their own backyar as well as clear divisions between research institutio along conventional lines This could explain, writ Charles Smith (Far Eastern Economic Review, March 1985), why West Germany lags behi Japan in devising ways to combine integrated circu with traditional mechanical engineering products su as machine tools

When Yukinori Kuwano, of Sanyo's research ce ter in Osaka had in the sixties a good idea for

search on amorphous silicon, his company said neither yes nor no. Instead, it turned a blind eye and let the work go on, "under the table" so to say. Good ideas with no foreseeable application are not frustrated in the bigger Japanese companies. As a result of Kuwano's unofficial work Sanyo produced in 1984 five million units of amorphous-silicon solar-cells every month. Kuwano says that the twentieth century is the crystal age, but the next age will be the amorphous age.

Regulation of technology imports

From 1950 to 1978, Japan imported technologies totalling 31,738, according to the Annual Report for Fiscal 1978 on Introduction of Foreign Technology by the Science and Technology Agency. The country has built up a system for regulation in contracts introducing foreign technology. There may be situations where a foreign licensor tends to impose unfair terms on a domestic licensee. To eliminate such unfair terms two statutes, namely, the Foreign Investment Act of 1950 and the Antimonopoly Act of 1947 have been provided for legal remedies.

In preparing for the liberalisation for the introduction of foreign technology, on 24 May 1968, the Fair Trade Commission (FTC) issued its "Antimonopoly Act Guidelines for International Contracts Introducing Technology" as an aid to the conclusion of acceptable contracts (Yoshio Ohara, 1981) Four examples of such guidelines are given below

1. To restrict the area to which the licensee may export the patented goods. However, cases coming under (a), (b) or (c) listed below are excluded. (a) In case the licensor has patent rights, etc. which have been registered in the restricted area; (b) In case the licensor is selling patented goods in the restricted area in his normal business, (c) In case the licensor has granted to a third party an exclusive licence to sell in the restricted area.
2. To make it obligatory for the licensee to inform the licensor of knowledge or experience newly obtained regarding the licensed technology, or to assign the right with respect to an improved or applied invention by the licensee to the licensor or to grant the licensor a licence thereon. However, such cases are excluded where the licensor bears similar obligations and the obligations of both parties are equally balanced in substance.
3. To restrict the manufacture of patented goods to a limited field of technology or to restrict the sale thereof to a limited field of sales;
4. To restrict the use of patented processes to a limited field of technology.

Table 2 shows a breakdown by various types of restriction in contracts introducing technology on which administrative guidance was given over the period 1975-1978 (Yoshio Ohara, Journal of World Trade Law, Jan: Feb., 1981). Inspite of the scrutiny by the FTC, Ohara states, the number of international contracts introducing technology has not decreased and the scrutiny has contributed to eliminate unfavorable or restrictive terms of contracts. Making reference to the Japanese Guidelines and to legislation in other countries, the UNCTAD is endeavoring, Ohara states, to formulate a code of conduct on the transfer of technology as a kind of an international version of the Japanese Guidelines.

In a symposium on Economics and Technology, 17-19 March 1985 held at Stanford University, Daniel Okimoto, a Stanford University professor, outlines the steps taken by the Japanese Government since 1980 to boost research and encourage technological creativity.

Unlike the United States, until now, Japan has had a very small venture-capital market. The government has begun to deregulate the financial system to promote high-risk private investments. According to Okimoto, it is "doing all it can to push Japan beyond the frontiers of technology by organising a variety of ambitious national research projects in such seminal areas as new materials and optoelectronics " It has increased the government support for R & D; the support may reach a spending level of 3 per cent of GNP by the 1990's The country has begun a general curriculum reform to reduce the emphasis on rote learning and encourage 'creative synthesis' throughout the educational system

Japan's system of 'targeting' special industries for fast development should be seen as compensation for the lack of venture capital and absence of a military procurement budget, Okimoto thinks. He predicts, Japan will have to become more innovative, if only to stay ahead of the 'new Japans'-Singapore, Taiwan and South Korea.

Table 3 is an interesting comparison of government R & D expenditure by fields (1980) in U.S, Japan and France.

Tsukuba science city

No amount of the saga of Japan's rise to prosperity is complete without a mention of the future starting in the Tsukuba science city It is the geographical nucleus of Japan's scientific and technological effort. Set is more than 28,000 hectares of what was once farmland, it is a symbol of the country's confidence in its future. At least 6500 researchers work in the science city, often in applied science. The emphasis of their efforts is beginning to shift towards pure science as they seek technologies for the 21st century.

Japan continues to hold strong market shares in television sets, video cassette recorders, calculators,

watches, automobiles and so forth. As some of these markets are starting to level off, the industry has started its move into new high technology fields such as ceramics, optoelectronics, artificial intelligence and the "fifth generation" computer, and biotechnology. *It is also consolidating its position in the emerging* technologies-lasers, robotics, advanced materials and information networking systems.

To stave off the threats from the United States, South Korea and ultimately from China, the country is pinning its hopes on the semiconductor industry. As reported in the New Scientist, 21 March 1985, Kenichi Fukui, winner of the 1981 Nobel Prize for Chemistry, says that in fields like semiconductors it is becoming more and more difficult to distinguish between pure and applied research. As electronic devices shrink in size, there comes a point where researchers no longer consider solid material, but chains of molecules. At this level, the electronics engineer needs to know a lot of theoretical chemistry.

Setsuko Nakaki reports (New Scientist, 21 March 1985), "Last year, capital investment in semiconductors in Japan exceeded $4 billion, more than in either the steel or the car industry. And investment is still increasing To give just one example, in the coming financial year, Toshiba plans to increase investment in semiconductors by 70 per cent. At this rate, according to one estimate, Japan will invest more in this area of electronics this year than the US."

Tadahiro Sekimoto, president of NEC (formerly Nippon Electric Co.) is a strong proponent of "C&C" (computers and communications), a slogan reflecting his firm's philosophy for the future. He recommended to the Japanese Government a basic science policy that consists of three points . to strengthen Japan's basic research facilities, to seek to actively link creativity with science and technology development, and to focus on the application of science and technology results for the betterment of mankind and society (Time, March 11, 1985).

Tsukuba science city experiment was conceived way back in 1963 In the early 1960s, the Japanese planners became aware that continuous reliance on imported technology was risky at best and impractical as a long-run strategy Between 1970 and 1983 the government invested more than US $ 5.3 billion in Tsukuba, where there are now 51 governmental and private research institutes plus two universities, consisting of more than 1,700 buildings

Concluding remarks

In recent years the U S and Japanese companies are forming joint ventures and transnational investments. One can note a pattern in them. The United States carries out basic research leading to initial product design Then, in Japan, the production of the most complex parts and sophisticated assemblies occur. Back in U.S. the workers put th final pieces together. Finally, the American worke distributes, markets, and sells the products to othe Americans. The story is the same in advanced machin tools and robots, computer and semiconductor manu facturers, automobiles and in telecommunications The steel mills that the Japanese are now planning t build or modernize in the United States will get thei advanced steel-making machinery from Japan.

Writing in Current (Washington, D. C. Februar 1985), Robert B. Reich states, "Such experience i making products generates more social wealth tha does inventing them or assembling and selling them Production experience raises the overall level of skill in a population. It's a kind of social learning that ca be applied generally, across all kinds of goods-no just the latest inventions An entire nation benefit from having a large pool of workers with these valu able production skills"

There, in the fashioning of the Japanese miracle, i a lesson for us. Both in the U.S. and in Japan, stron technology drives strong economies. In other coun tries, weak technology is accompanied by falterin economies, inflation, high unemployment, poor ex change rates and declining productivity. Only a mira cle can bring prosperity to India and her dream to sa confidently into the 21st Century The miracle lies i promoting strong technology in addition to tacklin the problems of population, agriculture and ecolog

Table 1

	Engineering	Physical science	Agriculture	Medicine, Pharmacology, Health	Total number of people
	(in percentage terms)				
1	2	3	4	5	6
U S	25	38	8	29	298,000
Japan	62	10	12	16	134,000
U K	30	50	4	16	32,000
W Germany	24	30	6	40	25,000

Note : U S and U K , 1975; Japan, 1979, Germany, 1977

Source : Ministry of Education, Japan.

Table 2

Restrictions in contracts introducing technology subject to administrative guidance (1975—1978)

Type of restriction	Fiscal year 1975	1976	1977	1978
1	2	3	4	5
Unfair business practices Restrictions on improved technology	94	199	174	173
Restrictions on dealing in competing goods	39	49	39	47

1	2	3	4	5
Restrictions on seller's supplying licensee with raw materials, parts, etc.. . . .	16	6	12	22
Customer restrictions .	5	5	8	13
Restrictions on resale prices . . .	3	2	–	–
Imposition of undue prices . . .	6	5	1	2
Quality restrictions .	–	–	–	6
Suppression of parallel imports . . .	12	2	1	–
Restrictions on advertising . . .	4	2	2	9
Restrictions on sales methods . . .	–	–	–	–
Restrictions of business activity . .	–	13	8	1
Other . . .	7	6	9	22
Unreasonable restraints of trade .	–	–	–	–
Total number of restrictions subject to administrative guidance . .	186	289	254	295
The number of contracts which received administrative guidance .	156	241	212	228
The number of reported contracts introducing technology	1,198	1,260	1,211	1,356

Source · Fair Trade Commission, Annual Reports, Fiscal years 1975-1978.

The number of contracts which received administrative guidance does not coincide with that of restrictions subject to guidance, due to the fact that two or more clauses in a contract can be the object of a separate guidance.

Table-3

	United States	Japan	France
Defence and aerospace	47 3	16 3	49 3
Industry	0 3	12 2	7 9
Agricultural	2 7	25 4	4 3
Energy and infrastructure	14 2	34 4	16 0
Health and welfare	15 2	11 2	7 5

(in percentage terms)

Government R & D expenditure by fields (1980)

Source Gary Saxonhouse and Daniel Okimoto) □

(concluded)

Houses for Central Government employees

The Central Public Works Department of the Ministry of Urban Development is at present engaged in construction of 8,273 houses for the Central Government employees in 14 major cities in the country Out of these, 5,816 houses are likely to the completed by the end of 1986.

The cities where the houses are likely to be completed by the end of 1986 are Delhi (3499), Calcutta (1040), Hyderabad (328), Lucknow (284), Bombay (190), Ghaziabad (112), Madras (104), Faridabad (100), Bangalore (50), Kohima (24), Agartala (17), Shillong (16) and Simla (16).

How to minimise hazards of development

The simplistic notion of development as a frictionless process has never been accepted, at least by Indian Planners. In fact, it is known that development, with all its positive features, will also cause disruption of several existing formations and structures. The real challenge is how do we minimize these costs.

The above observation was made by the Deputy Chairman of Planning Commission Dr Manmohan Singh in New Delhi recently while inaugurating the VII General Conference of International Federation of Social Science Organisation (IFSSO) Dr. Singh said that the displacement of vast numbers of citizens from their traditional survival systems as a result of development efforts; the resurgence of religious and fundamentalist revivalism, the fragmentation and revival of separatist identities and sub-identities—all of these are stark problems that face several countries today

The Deputy Chairman stated that we need a deeper understanding of the wide range of ethnic assertions, inter-regional and inter-ethnic tensions which threaten the cohesiveness and integrity of many countries Obviously, simple managerial solutions cannot provide answers towards the self-managment of complex societies. The complexities of these problems require new approaches It is a challenge for social scientists and planners which will have to be faced

In a large country like India, Dr. Singh said, the task is obviously complex and we have to operate at many levels It is necessary to have a fresh look at the considerations which govern both the priorities and allocations of resources, particularly public financing and support, for social science research. We have no dearth of specialist professionals, institutions or departments on every conceivable theme. But the research system does not seem to be adequately linked with the mass of our citizens and the issues that concern them. I have a feeling that there has been no real dearth of resources for worthwhile social science research studies in India The real resource constraint arises from lack of conscious, qualified and competent social science researchers. I do hope that when you discuss the important theme of allocation of resources to social science research you would keep these dimensions in view. □

Boosting growth of electronics

GOVERNMENT HAS TAKEN a number of steps to accelerate the growth of electronics in the country. The basic thrust of new policy is in the following direction:

General liberalisation of licensing policy, with emphasis on promotion rather than on regulation.

Where controls are unavoidable, as a general rule, resort will be taken to fiscal controls, in preference to physical controls.

By and large, there will be no upper limit on capacity and no restriction on a sectoral nature like large scale, small scale, private sector, public sector, etc. except where specific reservations are made on very special considerations.

Volume production at the economic level, with contemporary technology, would be the guiding principle.

Some specific measures taken reveal that:

For certain category of items "broad-band" licences are to be issued.

The electronic components industry has been delicensed. Also consumer durables are delicensed subject to the condition that the units would not draw upon the resources from the financial institutions.

Import of technology and foreign collaboration will be permitted in all areas of electronics. Units having foreign equity less than 40 per cent will be permitted in all areas.

For Telephone Instruments, Electronic PABX Systems and Rural Automatic Exchanges, the technology will be acquired on a centralised basis to achieve economies of scales.

Development of small scale industry will be encouraged. Approval for a number of items have been decentralised to the level of State Directors of Industry. Investment limit for this sector has been revised to Rs. 35 lakh and that for ancillary units to Rs. 45 lakh.

For the sake of economies of scale, it is proposed to de-reserve some of the components which are reserved for small scale sector.

Electronic units will be allowed to be established in any permissible location.

In the area of telecommunications, manufacture of telephones, EPABX, teleprinters, fascimile equipment, data communication terminals, etc. has been allowed in the private sector. Other items can also be taken up by private sector with Central/State Governments participation of at least 51 per cent of the equity share.

In almost all areas of electronics, excluding consumer electronics, MRTP companies have been exempted from clearance under section 21 and 22 of MRTP Act. This is besides the increase in limit of MRTP investment from Rs. 20 crore to Rs. 100 crore.

A new computer policy has been announced with emphasis on the manufacture of computers based on latest technology at prices comparable with international level and progressive increase in indigenisation consistent with economic viability.

Import duty on raw materials, components and capital equipment has been reduced. In the case of computers, including software and black & white TV receivers with 36" screen size, there is complete exemption from excise duty.

The import policy has been rationalised with a view to increasing production. □

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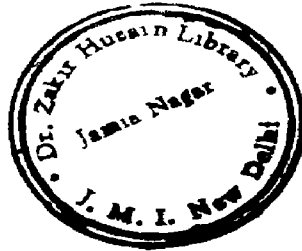
Environment and ecology protection in Seventh Plan

AN OUTLAY OF Rs. 427.91 crore has been provided in the Seventh Plan for the protection of environment and ecology.

The programmes aim at removing some of the weaknesses in the existing environmental planning system. Environmental considerations form an important element in the criteria for setting development targets and assessing plan performance in all sectors under the Seventh Plan. This environmental management would be integral to all environmental activities.

A major programme for the control and prevention of pollution of the river Ganga is undertaken as a science and technology mission during the plan period. Under ecological development, the plan aims at restoration of already degraded eco-systems through practical field schemes such as land reclamation, afforestation, cleaning of water bodies, etc. The programme is also geared towards arresting further damage to eco-systems and the promotion of a conservation-based development strategy.

It is now being increasingly recognised that environmental factors and ecological imperatives must be built into the total planning process if the long-term goal of making development sustainable is to be achieved. Environmental management, therefore, is a major guiding factor for the national development in the Seventh Plan.

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VOL. 30 NO. 5

Spotlight on long-term fiscal policy

MARCH 16—31, 1986, RUPEES 1.50

Is funding of Seventh Plan ticklish?

NEXT ISSUE

Zero-base budgeting

Major rural sanitation programme to be launched

THE PRIME MINISTER has approved launching of a major integral programme for sanitary latrines in rural areas during the Seventh Plan.

At present less than one per cent rural population has access to sanitary latrines. This not only constitutes a major health hazard but also creates a special problem for women who lack privacy.

The Prime Minister has also approved launching of a Technology Mission to provide safe drinking water in all villages by large scale application of science and technology inputs developed within the country.

Under the new rural sanitation programme, it is proposed to construct sanitary latrines in all village level institutions like health sub-centres, schools, 'anganwadis' etc., and, to the extent possible, provide sanitary latrines in all rural housing projects sponsored by State Governments.

Sanitary latrines will also be provided as an integral part of the housing programme for one million Scheduled Caste and Scheduled Tribe families under the Rural Landless Employment Guarantee Programme.

A provision of Rs. 30 crore has been made under each of the programmes of Rural Landless Employment Guarantee Programme and National Rural Employment Programme for construction of five lakh sanitary latrines in rural areas during the Seventh Plan.

Under the new sanitation programme, the States can draw up projects under RLEGP for complete coverage of those villages where the population of Scheduled Castes and Scheduled Tribes exceeds 25 per cent of the total village population.

The programme is designed to involve voluntary agencies and mass media for health education and promotion of use of sanitary latrines. A massive drive would be undertaken to train masons in construction of low cost sanitary latrines.

The Seventh Plan aims to provide potable drinking water to the entire rural population by 1990. The setting up of the Technology Mission should make it possible to provide safe drinking water to the rural population within the available resources and by tapping science and technology potential within the country.

By the end of the Sixth Plan, out of 2 31 lakh identified problem villages, 1 92 lakh problem villages had been provided with at least one source of potable drinking water, covering 54 per cent of the rural population.

This wide coverage was possible through massive Sixth Plan investment of Rs. 2,485 33 crore, which was more than the total investment made in this sector since the beginning of the planning process. The India Mark II handpump developed through Council of Scientific and Industrial Research formed the backbone of this programme, providing low-cost technology solution for major portion of the country. □

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A mixture sweet-sour!

Dr. Malcolm S. Adiseshiah

The direct benefit of the long term fiscal policy, says Dr. Adiseshiah, is that the fiscal consequences of the Seventh Plan are now clearly set forth which will guide the major economic decisions of both the government and the public during the plan period. It will provide direction, rationale and coherence to the annual budget and establish links between fiscal objectives of the Plan and annual budget exercises. At the same time, he however cautions, the most serious drawback of the policy is that it 'freezes the present inequitable tax structure and perhaps will be worsening it' as the indirect taxation will continue to contribute its present large receipts, may be with increased rates. It is also not related to the serious balance of payments crisis that face us in the Seventh Plan.

THE LONG TERM FISCAL POLICY as announced in Parliament in December 1985 and elaborated in the document issued that month by the Ministry of Finance has many positive features

Positive features

Objectives

The four objectives or benefits of such a policy as set forth in paras 1.10 to 1 13 are sound and unexceptionable. They comprise giving direction, rationale and coherence to the annual budgets on the one hand, and establishing links between fiscal objectives of the Plan and the annual budget exercise on the other This is rather a tall claim and the extent to which they are met or not met will justify the current exercise.

Plan outlay and financing

The statement lays bare the Plan resources needed for each of the five years of the Seventh Plan, starting with the Plan outlay proposed for the next four years (paras 2-9). Similarly the means of financing these outlays are set forth in Table 3, through public savings, domestic borrowings, net capital inflow from abroad (including external commercial borrowing) which rises steadily during the five year period. Given the decline in concessional loans—both from IDA and bilateral sources— this means an increase in the borrowing from the international capital market. Domestic borrowing is tailored to decline over the years in all forms of market borrowings, budgetary deficits and others Public savings reach a higher level than domestic borrowings during the terminal year of the Seventh Plan. Public sector undertakings' contributions (which are part of public savings) are projected to spurt from 2.9 per cent of GDP to 4 9 per cent These are hopes and 'expectations' which are justified, not on the basis of actual performance, but on the basis of 'enormous resources the nation has invested in these units'. The financing projections are probably the best estimates that can be made now, but they contain a certain margin of error and have built-in elements of destabilisation.

Plan and non-Plan expenditure

To this outline of Plan outlay and methods of financing is added in Table 4 the revenue from both direct and indirect taxes to be raised each year in the Seventh Plan, as well as the major items of non-Plan expenditure on defence, interest payments, subsidies on food and fertilisers and others. These items are also set forth annually as well as averaged for the Seventh Plan period. The most

serious escalation in non-Plan expenditure is on interest payments which shoots up from 3.0 of GDP in 1985-86 to 4.1 per cent of GDP in 1989-90, followed by defence which shares with the former, the trend to rise from year to year. With the balance from current revenue being a minus quantity in the first two years and a negligible amount thereafter, the need to economise on all expenditures, including defence and subsidies, stands out if the Seventh Plan financial targets are to be met.

End of budget secrecy

There are two positive results from this presentation of the Seventh Plan fiscal profile. A first one is that the veil of secrecy which has surrounded budget making so far, so that neither Parliament nor the Council of Ministers has a real hand in determining its major contours, should now be ended. The Annual budgets can now be openly formulated and properly and fully debated, scrutinised and approved by Parliament, preferably at a committee stage, and also discussed and analysed by the public and public finance specialists. The secrecy was an unnecessary left over from British tradition, which has been blindly followed and should now be given up. The second positive feature is that the fiscal consequence of the Seventh Plan are now clearly set forth, and on this basis should guide the major economic decisions both of government and the public during this period. The document has succeeded in linking the Annual budgets with the Seventh Plan financial imperatives on certain assumptions, which are open to question.

Income taxation

On taxation, the commitment to maintain the present rates of (personal) income and wealth taxation for a minimum period of five years has the one stated advantage, that of stability for the government in its revenue accruals and for the tax payer, as has been pointed out. To this is added the promise of legislation to simplify the complex income tax law and a review of the effects of inflation on the tax rates every 2 or 3 years.

Savings incentives

A further positive feature is the incentives given to increase the rate of savings both through the proposal for a National Deposit Scheme (new series) which will be tax exempt upto 50 per cent of Net deposits as far as individual income tax payers are concerned, and the scheme for corporate enterprises to deposit a part of their profits with IDBI to be used by them for investment in plant and machinery.

Negative features

Freezing inequities

The most serious drawback of the policy is that, given its decision to hold direct taxation to the present low level of rates for the next five years, while indirect taxation will continue to contribute its present large receipts and perhaps with increased rates, the policy freezes the present inequitable tax structure, and perhaps will be worsening it. Table 5 and figures 4 and 5 show that the direct taxes collected by the Union Government as a proportion of total tax collection has declined from 27.2 in 1970-71 to 21 in 1984-85, while the share of indirect taxes has risen from 72.8 to 79.0 during the period. In particular, the share of income tax has declined from 14.2 per cent in the first half of the seventies to 9.1 per cent during the Sixth Plan, with corporation tax remaining stagnant. Table 4 shows that during the 5 years of the Seventh Plan, this ratio will continue to be loaded in favour of indirect taxes, which will grow from 6.3 per cent of GDP in 1985-86 to 7.3 per cent of GDP in 1989-90, while that of direct taxes will increase from 1.5 to 2.1 in that period. The hope of making indirect taxation less regressive, and using of the increase in tax collection during the first 6 months of the current year as an argument for the lower income tax rates, (without a further detailed analyses of the sources of this 6 months increased collection) are somewhat illusory and shaky.

Problem of resource crunch

In fact at a time, during the Seventh Plan, when there is a serious resource crisis, 'the stabilising of direct taxes rates and relying for additional resources on 'buoyancy' (which, as just noted, rests on rather shaky grounds) is in reality giving hostages to fortune. Too much of the policy seems to rest on measures proposed to counter tax evasions, which in the forms proposed creates its own problems. One of the causes for the bottom falling out of the automobile and component parts market is said to be the form of measures taken against tax evasions.

Expenditure tax

The move towards expenditures tax which is one of the justifications for the proposed National Deposit Scheme requires that all the net savings, and not only those related to this scheme, should be covered. There is no reason why savings, and dissavings in general, and outside and beyond the purview of the proposed National Deposit Scheme, are disregarded if the intention is really to move in the direction of an expenditure tax, for under the proposed dispensation, one's dissavings in other directions could out-weigh the savings under the scheme, and yet the benefit of tax exemption would be obtained. Such a comprehensive net savings coverage must also be acompanied by a full-fledged wealth and progressive gift taxation, a comprehensive system of reporting of all earnings and savings and a revival of the estate duty

Indirect tax delays

Similarly the simplification of central excise and the rationalisation of customs tariff have been the subject of innumerable studies: there is no need for further studies either by the ministry (para 6.17) or by a high powered committee (para 2.28) to put into effect these long agreed and established reforms.

MANVAT vs. MODVAT

In this connection the substitution of the carefully studied and cautiously formulated MANVAT, a tax on value added by manufactures, which was recommended more than half a decade ago, by an awkward MODVAT is unconvincing. MODVAT is awkward in that it leaves too much to the discretion of government, both in the commodities to be covered and the extent of coverage of this system, and awkward also as a term.

Realism of annual growth rate

The statement makes assumptions with regard to important areas of the economy during the Seventh Plan, and to that extent is likely to be seriously modified, because of the unrealism of some of the assumptions. The assumption behind the whole exercise is an average 5 per cent rate of growth of the economy. The 5 per cent growth attained in the Sixth Plan was on the basis of the low—5.1 per cent base of 1979-80. In the Seventh Plan, there is no such bonus available, and the attainment of the hope of 5 per cent growth needs to be set against the reality of the 3.6 per cent trend rate of growth.

Inflation unaccounted

Another assumption in the statement is relating to the zero rate of inflation. The only reference to inflation is with regard to the rates of personal income tax. Much more serious is the fact that since the Third Plan, the inflation rate has consistently eroded both Plan resources and Plan achievements. There is no reason to believe that the Seventh Plan will be any different. Not making allowance for inflation in computing the resources needed by the Plan introduces a further element of uncertainty.

Balance of payment deficit

Finally the long term fiscal policy is not related to the serious balance of payments crisis that face us in the Seventh Plan. The Seventh Plan document provides for a whopping trade deficit of Rs. 34,700 crore and a balance of payment deficit of Rs. 20,000 crore for the 5 year period. Already the data on foreign trade of the first four months of this financial year April—July 1985-86, seem to indicate that these enormous deficits provided for in the Seventh Plan document are likely to be far exceeded. During the first four months, the import bill has shot up by 30 per cent. while the increase in exports is trailing at 0.4 per cent, resulting in a four months trade deficit of Rs. 3,079 crore, compared to the first four months of 1984-85 deficit of Rs. 1705 crore. And this is before the import liberalisation policy has had time to take effect. The machinery and component orders now in the import pipe line will send this year deficits soaring. Our fiscal policy seems to ignore this serious factor.

Total elimination of scavenging under the Seventh Plan

The Centre has asked the State Governments and Union Territory administrations to prepare details of the scheduled castes families in each occupational group needing assistance, quantum of assistance required for each family and the manner in which it should flow to them in order to pursue the anti-poverty programmes in effective manner. It has also asked the State Governments to provide basic facilities like water, housing, health, electrification link roads and fair price shops to the scheduled castes and scheduled tribes basties by the Seventh Five Year Plan. Total elimination of scavenging is one of the objectives of the Seventh Plan. For this purpose, low cost sanitation and whole town approach for conversion of dry latrines into water borne latrines should be adopted and liberated scavengers redeployed in induction into tertiary sector.

The Centre feels that for scheduled castes engaged in land based activities State Governments should take up programmes covering allocation of ceiling surplus land, government waste land and other surplus land to landless. Implementation of ceiling limits should be stepped up and loopholes noticed plugged. Land holding families should also be helped in development of the land through agricultural credit, irrigation and provision of improved inputs For agricultural labourers enforcement of minimum wages should be enforced apart from acceleration programmes like animal husbandry, handicrafts, cottage industries and inculcation of skills for their induction into tertiary sector.

In view of the Prime Minister's observations, following his recent visit to remote tribal areas of MP, Orissa, Rajasthan and Kerala, the Seventh Plan programme would focus on making sufficient investment, identifying poorest of the poor, supply of productive assets in relation to local conditions and taking up of programmes to upgrade and promote traditional skills of the tribals.

Could going alone do the trick?

Prof. K. N. Kabra

Describing the long-term fiscal policy as a step to determine afresh the relationship between the process of planning and budgeting, the author feels the States should have been involved in this important exercise since it covers the entire fiscal system of the country. Without this, he wonders, how the planning in the federal polity is going to derive strength and sustenance from such a policy as the state budgets still remain an 'arena of ad hocism'.

THE ANNOUNCEMENT OF THE LONG-TERM FISCAL POLICY (LFP) may well be considered a step to determine anew the relationship between the processes of planning and budgeting in India. Given the nature of Indian planning which operates with public outlays connected with various projects, programmes and policies as its key variable, the fiscal policy has to be used as an instrument of plan-implementation. Once a medium-term plan is approved, its phasing into annual plans has to be among the major influences guiding annual budgeting. It is true that the process of plan-formulation has to take into account the fiscal implications and constraints as decisive factors. It means that the fiscal choices do not have to be opened *de novo* and changed independently of the plan, unless either the plan itself has to be recast owing to some compelling factors or it is seen that the plan has not been based on an appropriate appreciation of the fiscal constraints. Apparently, these kinds of factors do not come into play frequently. But the iterative interaction between planning and budgeting has so far proceeded in such a manner that it was felt by many as though in the process of annual budgeting the five-year plans were being rewritten in an *ad-hoc* manner by the Finance Minister, or more precisely by the Department of Economic Affairs, Ministry of Finance, without any logical links between the two which may be perceived by the outsiders. This was not simply as a devaluation of the Yojana Bhawan, but a substantial dilution of the planning process. A comparison of the phasing of plan outlays over the five-year period for different five year plans is likely to show wide variations. It may be difficult to find any *ex-ante* rationale for such variations, though one may always manufacture some *ex-post* justifications for the observed pattern. Planning is based in its very nature on *ex-ante* rationale, which can be deviated from only in the event of large unforeseen changes.

As Plan signals

In any case, the linkages between planning and budgeting are no more matters of phasing of plan outlays, just as budgeting is no more a process of raising resources. Our plans are not only a blueprint of activities to be undertaken by various public agencies, they also embody programmes to be carried out by private agencies. The plan gives to them either a consistent macro-level forecast or a forecasting framework. Since the fiscal policy impinges on the private sector in many different ways, it is a mechanism of transmitting the plan signals and incentives to the private sector and enabling them to behave in a manner visualised by the plan, particularly with respect to saving, investment and consumption decisions. These decisions vitally affect income-earning opportunities and real incomes (both by means of public and private consumption) for the common man. Thus the size of the annual budget has to be derived from the plan as a means

of directly and indirectly implementing the plan. Any slippage and deviation in any one year's budget, particularly in real terms, would just open up floodgates of constant deviations and distortions.

Helps remove operational lacunae

Each five year plan, therefore, explicates its fiscal policy perspective, though has remained silent on its annual phasing. Such exercises have been in very broad, general terms and have generally been either vague or silent on many policy options, desiderata and guidelines for operational decision making even for the Union budgeting, let alone the budgeting for the States, Union Territories or local bodies This has been a major weakness of Indian planning. The LFP states that, "The long-term fiscal policy will serve as a bridge between the five-year financial targets of the Seventh Plan and the annual budgets by providing an indicative, year-wise financial framework for fiscal policy" This is a step towards fulfilling an important operational lacuna in our planning process. Whatever disagreements one may have with the specific policy choices, criteria for decision making and financial projections contained in the LFP, or better still, medium-term fiscal policy framework for the Seventh Plan, the very fact that such an exercise has been undertaken and made public, goes to remove a recognised weakness of our planning, provides 'objective' yardstick against which each year's budget may be appraised, may produce "announcement effects" conducive to plan-fulfilment if the policy design is consistent with the plan-objectives and makes many processes, which have been hitherto unnecessarily hidden from the public eye, open for public scrutiny.

But leaves out State budgets

At this stage, it may be suggested that the LFP has gone only part of the distance in this connection in so far as it has left the state budgets out of its purview. Ours is a multi-level planning system in which the states have to play an increasingly important part and the lower-level agencies are largely inactive because they lack a financial base of their own, on account of absence of financial autonomy for such agencies below the state level. It goes without saying that a long-term fiscal policy statement covering the *entire* fiscal system consisting of the Union and States cannot be the document finalised by the Union Finance Ministry alone; it has to be a joint document of all the parties concerned. But such an exercise at a joint, collective fiscal policy document as a counterpart of a plan jointly finalised and approved (as different from 'prepared') by the Union Government and the states, is not only technically and constitutionally a necessity but, being concerned with the most powerful instrument of plan-implementation, is functionally indispensable The exercise of formulating LFP would become complete and serve its avowed objectives when the states are drawn into a dialogue for completing the coverage of the fiscal policy. The importance of involving the states can, e.g., be seen from the fact that while the centre's tax receipts constituted about 8 per cent of the GDP, the combined tax receipts of the centre and the states amounted to 16.25 per cent in 1983-84. By not undertaking to evolve a joint, mutually supportive and consistent fiscal policy involving the states, one wonders how planning in a federal polity is going to derive strength and sustenance from the fiscal policy. Thus the evolution of a medium-term fiscal policy (LFP being a misnomer) is a useful exercise for preventing public finance from treading a path autonomous of planning and making it a planned instrument of plan-implementation (a step towards planning of plan-implementation). However, at present, it remains a half-way house in so far as the state budgets still remain an arena of ad hocism and not an integral part of the "Long-Term Fiscal Policy"

Before taking up specific issues arising from the LFP, one would like to point to elements of what might be called 'disinformation' in the LFP document. Though any document of this kind inevitably has a public relation angle to it, beyond a point such a trait becomes a positive drawback because for its operationalisation, appreciation and a realisation of announcement effects, unambiguous and meaningful delivery of the message contained in the LFP is essential. One finds that many of its formulations and *obiter dicta* are addressed to the galleries

Claims and realities

The deteriorating external environment is recognised at the very outset, though the statement is interlaced with what may well be considered uncalled for bragging regarding the maintenance of the tempo of growth by our strategy of development and its management. Afterall, neither the growth rate was really as much as claimed, nor is meaningful as is implied. The pattern of financing of the Sixth plan went topsy-turvey, as reflected in deterioration of Balances from Current Revenues (BCR) and the escalation of non-development expenditure to Rs 82,785 crore against the anticipated level of Rs 67,405 crores. Similarly, the role played by external finance is sought to be played down (by calling it "very modest") when it is known that we went in for the IMF extended fund facility during this period, continued to borrow abroad for rupee projects and underplay borrowing by showing it as a proportion of total plan financial resources rather than of external finance needed for the Plan. Import surpluses financed by such borrowing played crucial role in short-run and long-run management and yet it is portrayed a 'very modest' phenomenon.

Share of direct taxes

The document speaks at a number of places of increasing the share of direct taxes, while it has frozen the direct tax rates and does not propose any new direct taxes. Its own arithmatic shows that the share of indirect taxes at the end of the Seventh Plan would not only remain substantially higher (7.3 per cent of GDP against direct taxes at 2.1 per cent) but against a 0.6 per cent anticipated increase in the share of direct taxes, the share of indirect taxes would increase almost at double the rate ; to be precise by 1.0 per cent. Thus the facts present an altogether different story from the one contained in the aims of the LFP.

Similar disinformation is visible regarding the role of borrowing. At the level of principles it is stated that the Plan will aim at "diminished recourse to borrowed funds". But neither the absolute nor the relative share of borrowed funds is proposed to be brought down as can be seen in paras 2.5 and 2.11 of the LFP. As a result, share of interest payments is going to increase 3 per cent to 4.1 per cent by 1989-90. Since food subsidies are said to cover edible oils and sugar, it appears that even misinformation has not been guarded against

GDP as yardstick

Another feature of the LFP is to present practically all the data as per cent of GDP. While this makes some comparisons easy and sharp, it tends to conceal a great deal which only absolute figures can indicate. Moreover, many variables are better shown as proportions of plan outlay, central revenue, total public expenditure, public investment, etc., since all the variables are not expected to bear any specific proportion to GDP and change in any specific manner over time, this method of presentation prevents a clear perception. A great deal of disinformation could have been avoided if, at least, absolute level of projections were also indicated. A policy document of the kind is announced *inter alia* to produce many announcement effects but such a short-hand and ambiguous method of presentation weakens or counters such effects.

Also policy stabilising prices

Wherever absolute figures are given, understandably they are presented in 1984-85 prices. But economic logic and past experience suggests that the resources exercise which is done "assuming a non-inflationary situation over the Seventh Plan period" cannot be realised. With the wholesale price index up by about 20 per cent points in the first year of the Plan, the LFP must have spelt out elements of price stabilisation policy as also methods of dealing with the inevitable price increases. The finances needed for the plan would have to rise if the real plan is to be protected. Such a policy framework, rather than becoming self-fulfilling, would have engendered greater confidence in price stability.

In fact, the purpose of an explicit policy exercise is to make a thorough assessment of the underlying and emerging situation, based on alternative assumptions, throw policy options, and indicate choices made. Since non-inflationary growth is an important objective of the Seventh Plan, fiscal policy has to sharpen its anti-inflationary edge. This would involve many teasing dilemmas and some cruel choices. Do we increase administered prices in the face of rising costs or absorb them by various devices, including greater operational efficiency ? How to reconcile stability with the strategy of agricultural growth which emphasises rising physical output irrespective of input intensity ? Would not liberalised imports bring in imported price level not shown responsiveness to increased levels of supplies ? Would not a refusal to allow prices increases to public enterprises eat into their surpluses ? Has the pursuit of incomes and price policy been given up owing to apparently irreconcilable pulls and pressures exerted on the fiscal policy.

Can one not say that all the basic and important issues which have been accumulating over the past two decades have remained unresponded to in the LFP ? It seems that having arrived at the financial magnitude of the Seventh Plan public sector outlay, the LFP has riveted its attention almost exclusively to the task of raising these resources. Thus the entire question of public expenditure is reduced to the ability to make finances available according to plan allocations. It expresses utter helplessness in the face of defence, interest payments, food and fertiliser subsidies which take up nearly 70 per cent of non-plan revenue expenditures. No visible and concrete results of cost effectiveness, zero-based budgeting and multiple-year allocations can be seen in the form of changing the role of BCR. The Indian administration used to be called the costliest and the lordiest one. The LFP is silent on this issue, if any absolute or relative (but non-mimetic) justification exists for our non-austere lavish public spending. A 5 per cent saving on administrative costs shows no apparent concern for the high materials intensity of the administration and man-materials ratio in providing many services. While the heavy cost of incentives for encouraging savings and investment are recognised as also their role in introducing loopholes for evasion, no exercise to work out the loss of revenue and its comparison with actual and likely increases in savings and investment appear to have been undertaken.

The policies for preventing tax-evasion (which is a less ambitious task than unearthing and checking the proliferation of black incomes) are peripheral and may touch only a small part of conservativity estimated over Rs. 37 thousand crore of black incomes.

(Continued on page No 16)

Whither long-term fiscal policy ?

This issue continues to haunt us !

Prof. B. B. Bhattacharya

The long-term fiscal policy, says the author, fails to provide any solution to the key problem, knotty too, of raising resources for the plans. The Seventh Plan, according to him, has begun in adverse conditions as far as the Centre's resources position is concerned mainly because the contribution of the public savings has declined sharp since 1970s. Result?..dependence on borrowed resources for public investment and increased debt burden. So, the only solution, feels the author is to raise the tax and non-tax revenues much faster and to curtail drastically the non-plan expenditure.

IT IS WELL KNOWN THAT the annual budgets of the central and the state governments in the past were often inconsistent—if not at variance—with the fiscal policy implicit in the Five Year Plan for the corresponding period. A glaring example of this is the difference in the policy regarding subsidy between the Sixth Five Year Plan and the annual budgets of the central government during the Sixth Plan period. The Sixth Plan recommended a reduction in the level of subsidy on food and fertilizer to generate additional resources for the plan. In practice, however, the annual central budgets during this period continued to allocate increasingly larger amount on subsidy, and consequently the total subsidy instead of going down from its pre-plan level of Rs. 1680 crore in 1979-80 actually increased to Rs. 7047 crore in 1984-85.

Why long-term policy ?

Ideally the annual budgets of the central and the state governments should be based on the annualised version of the five year plan. In this system, the five year plan would provide the basic guideline for public sector plan expenditure, and all other expenditures and revenues would be adjusted to the target plan expenditure. In practice, however, such a fine tuning of annual budgets in relation to the five year plan may not be feasible for various reasons. Firstly, the five year plans are formulated with a long and to some extent medium-term perspectives of the economy. The purely short-run phenomena, like the weather-induced fluctuations in agricultural output, do not influence plan as much as the long-run factors do. The budgets of the central and the state governments, however, have to give due considerations to the short-run behaviour of the economy. Thus, the inflationary situation may affect allocation of public investment much more significantly in the annual budget than in the plan. The differences between the long and the short-run perspectives of the economy may therefore lead to some adjustments in the plan allocation in the budget. Besides, the long-term perspectives of the economy may also change during a five year plan period, thereby necessitating a mid-course change in plan priorities and consequently in budgetary allocations.

Another major problem in matching the annual budgets with the five year plan is that while a Plan concerns primarily with the investment outlay of the public sector, the budget covers all aspects of the fiscal system. The scope and objectives of the two are therefore different, and these differences may lead

to some adjustments in the budgets in relation to the plan

To provide financing pattern

In view of these problems a need was felt for a longterm fiscal policy which would be consistent with the pattern of financing a five year plan. The Long Term Fiscal Policy (hereafter referred to as LFP), announced by the government recently, co-terminus with the Seventh Five Year Plan, is therefore a welcome step It is hoped that LFP would build the bridge between the Seventh Plan and the annual budgets of the central government during the Seventh Plan period.

Through domestic savings

The validity of the LFP can be judged in relation to it's fulfilling the objectives of the Seventh Plan The Seventh Plan aims at a growth rate of real GDP, at factor cost, at 5 per cent per annum. The rate and pattern of growth envisaged for the Seventh Plan will require a total investment of Rs. 322,366 crore, of which Rs 302,366 crore would have to be mobilised through domestic savings, at 1984-85 prices. In order to generate the required savings, the gross domestic savings rate should go up from 23 3 per cent in 1984-85 to 24 5 per cent in 1989-90, or the marginal rate of savings during the Seventh Plan period should be 28.4 per cent Although the bulk of the domestic savings is expected to be contributed by the household sector, the share of the household savings in gross domestic savings is expected to decline from about 75 per cent in 1984-85 to about 70 per cent in 1989-90 and that of the public and the corporate savings are expected to increase from about 18 and 7 per cent respectively in 1984-85 to about 21 and 9 per cent respectively in 1989-90

The public sector plan outlay for the Seventh Plan is envisaged at Rs 180,000 crores (at 1984-85 prices) of which Rs 95,534 crores has been earmarked for the Central Plan The total resources deployed by the centre on the central plan, plans of Union Territories and assistance to state plans would amount to Rs. 129,039 crore, at 1984-85 prices. The total resources deployed by the centre as a proportion of GDP is targeted to be 10.1 per cent, which is higher than the Sixth Plan figure of 9 2 per cent (LFP, p 10). In short, the Seventh Plan requires :

(a) an increase in domestic savings rate from 23 3 per cent in 1984-85 to 24.5 per cent in 1989-90.

(b) a significant step up of savings rate in the public sector

(c) relatively larger mobilisation of resources by the centre for the Central, State and Union Territory plans.

We may now turn our attention to what extent the LFP will be able to fulfil these objectives

Only for Central Budget

First of all, we may note that LFP is concerned only about the central budget. It does not ensure, even if the LFP is strictly followed by the centre during the Seventh Plan period, a matching fiscal policy by the state governments One can only hope that since the central government plays the dominant role in resource mobilization and plan formulation, the central government lead in fiscal policy may be broadly followed by most state governments.

Domestic savings remain stagnant

Before we analyse implications of LFP, we may broadly review the pattern of financing the Sixth Plan. The Sixth Plan, according to the Seventh Five Year Plan, has achieved the macro growth target of 5.2 per cent per annum (We may remember that the Sixth Plan began at a comparatively low base of the economy) The investment rate in the Sixth Plan however was below target rate. The gross domestic savings rate which had reached its peak of 24.6 per cent in 1978-79, has stagnated around 23 per cent during the Sixth Plan. The Seventh Plan is therefore only aiming to restore the gross domestic savings rate reached in the pre-Sixth Plan period.

The public sector outlay for the Sixth Plan period was envisaged to be Rs. 97,500 crore at 1979-80 prices According to the latest estimates (The Seventh Five Year Plan) the actual outlay at current prices during the Sixth Plan period has been Rs. 110821 crore, and at 1979-80 prices has been about Rs 84,000 crore In other words, there was about 15 per cent shortfall in public sector plan outlay in real terms. The main reason for this shortfall is the decline in the savings of the government administration. According to Seventh Five Year Plan, the estimated balance from current revenue (BCR) for both the centre and the states during the sixth plan period even at current prices were lower than original estimates at 1979-80 prices. In the case of the centre the BCR was negative without additional resource mobilisation

Public sector performance

The performances of the public enterprises were relatively better than government administration in mobilizing plan resources during the sixth plan period. However, the contribution of public enterprises to plan resources in real terms was far below the original estimate Besides, we may also note that major part of the improvement in public enterprises savings performance is attributable to the increased surpluses of the public sector oil companies resulting from the sharp increase in indigenous oil production There is little prospect for similar growth in the Seventh Plan period

Resource mobilisation declines !

The Sixth Plan set a target for plan resource mobilisation by the centre of Rs. 64,250 crore at 1979-80 prices, of which Rs. 48,900 crores was earmarked for the central plan (inclusive of Union Territory plans) and the balance Rs. 15,350 crore for central assistance for state plans. The actual plan resource mobilisation by centre during the sixth plan period at current prices was about Rs. 79,431 crore, and at 1979-80 prices about Rs. 59,573 crore, which works out to be a shortfall of about 8 per cent in real resource mobilisation by the centre

If we look at the long-term pattern of resource mobilisation by the Centre (inclusive of resource mobilisation for state plan assistance) then we can see that-Table 1-the contribution of public savings-BCR plus savings of public enterpries-has declined from 36 per cent during the first-half of seventies to less than 30 per cent at the end of the sixth plan. More alarming is the sharp fall in relative share of BCR from 22 per cent during the first-half of 70s to a meagre 3 per cent in 1984-85. The seventh plan has therefore begun in an adverse condition as far as the centre's financial resource position is concerned

Table 1

Pattern of Mobilising plan resources by the Centre

	Average 1971-76	Average 1976-80	Average 1980-85	Average 1984-85
Plan Resources Mobilised by Centre as per cent of GDP	5 8	7 8	9 2	10 3
Pattern of Resource Mobilisation				
(percentage distribution)				
1. Public Savings	36	31	30	29
(a) BCR	22	17	8	3
(b) Contribution of public enterprises	14	14	22	26
2. Net Capital Inflow from abroad	21	14	13	14
3. Domestic Borrowings	43	55	57	57
(a) Market Borrowings	14	19	23	18
(b) Budgetary Deficit .	17	14	14	17
(c) Others .	12	22	20	22
	100	100	100	100

Source : Computed from Long-term Fiscal Policy, table 1. p 7

Non-plan expenses rise

The basic reason for the declining trend in the share of public savings, in general, and of BCR in particular, in the Centre's budget, is the relatively faster growth of the Centre's non-plan expenditure over the revenue receipts. The latter as a proportion of GDP has stagnated around 10.5 per cent during the last decade-1975-85. In the case of tax revenue there has been a relative fall : the share of tax revenue in GDP has declined from 8.2 per cent during the Fifth Plan period to 7 9 per cent during the Sixth Plan period In contrast, the non-plan expenditure of the Centre, particularly, subsidy and interest payments, has increased steadily throughout the last decade and a half. Since the relative contribution of public savings in Centre's plan resources has declined, the Centre has become increasingly dependent on borrowed resources for public investment As borrowings increased, the interest payment has also gone up, and this in turn has caused further erosion of BCR Thus, interest payments, which used to contribute about 20 per cent of Centre's non-plan revenue expenditure during the period 1971-76, and has contributed about 25 per cent during the Sixth Plan period, is expected to contribute as much as 35 per cent of non-plan expenditure during the Seventh Plan The only way to break this nexus between current borrowings and future borrowings through increased burden of interest payment would be to step up the current revenue-tax and non-tax

Investment, a knotty problem

The basic task of LFP should be to generate sufficient resources for financing investment in both public and private sector The Seventh Plan envisages a public sector plan outlay of Rs. 180 000 crores, at 1984-85 prices, of which Rs 129 039 crores would have to be mobilised by the Centre If this target has to be achieved, then the Centre's tax and non-tax current revenues must rise faster than non-plan revenue expenditure during the Seventh Plan period We have already noted that a reverse trend was observed during the Sixth Plan period The LFP, while recognising this basic problem contains no concrete proposal to solve this.

Raising tax collection, a myth !

The main thrust of the LFP is on stabilising the tax structure which has become not only regressive but also sluggish in recent years During the last decade the proportion of direct tax revenue to GDP has come down steadily from 6 5 per cent to 4 3 per cent In the same period the proportion of non-corporate income tax to GDP has declined even more sharply, from 3 2 per cent to 1 5 per cent The over dependence on indirect tax—whose share in total tax revenue of the Centre has gone up further from 73 to 79 per cent during the period 1971-85—has made the tax system not only regressive but also inflationary, through cost push effect of indirect tax The LFP aims to increase the share of direct tax revenue through better compliance of tax-payers It may be noted that a gradual reduction in personal income tax rates had no positive impact on income tax collections during the last decade, as would be evident from the figure 7, in LFP (p.22) In the light of past decade experience the LFP hope to raising the

income tax collection through better compliance of tax payers appears to be a misplaced confidence.

Concessions on savings, wise ?

Another noticeable feature of direct tax structure in the last decade is the gradual increase in fiscal concessions on household savings. Currently, household financial savings, in approved form, upto Rs. 40,000 per annum qualify for the personal income tax concessions. The LFP proposes to enlarge this by introducing a new tax benefit household saving scheme. When this scheme is introduced some more household income would be outside the purview of personal income tax.

Unbridled non-plan revenue expenses

The LFP contains no specific proposals to restrict the growth of non-plan revenue expenditure. In fact, if the LFP proposals regarding tax structure is implemented, then it can lead to a faster growth of non-plan expenditure First of all, a relatively slower growth of tax revenue would necessitate a larger domestic borrowing, which in turn would increase interest payment obligation and thereby erode BCR. Secondly, a slower growth of tax revenue would require increase in either or both of deficit financing and surplus of public enterprises The former, if excessive, may increase price and thereby non-plan expenditure, in general, and salary and wage bill, in particular. If the surplus of public enterprises is increased through higher pricing of public goods, particularly key inputs, then it can cause inflation and thereby erode public savings

Inescapable 'debt-trap' !

The LFP continues to stress on mobilizing household savings for public investment through fiscal concessions This Policy has three major drawbacks First, it makes the fiscal system regressive. Secondly, it increases relative shares of borrowings vis-a-vis tax revenue Financing public investment through borrowings creates additional interest payment obligations for future, and this in turn, given tax and non-tax revenue and expenditure, requires higher borrowing and still higher interest payments in future This procedure has a tendency to lead to 'debt-trap'. Finally, mobilizing household savings through fiscal concessions restrict the mobilization of resources to the tax payers Non-tax payers, without having the benefit of fiscal concessions, usually do not buy government securities.

The unsolved key problems remain

To conclude, the long term fiscal policy of the Government, announced recently, fails to provide a solution to the key problem of plan financing : the relatively faster growth of non-plan revenue expenditure over the tax and non-tax current revenue If the direct tax proposals in Long Term Fiscal Policy is implemented faithfully then it may make the tax system further regressive without any significant improvement in direct tax collection. Finally the biggest lacuna of the Long Term Fiscal Policy is that it aims to stablilise tax structure without any concrete step to stablise non-plan expenditure of the Central Government. In fact, Long Term Fiscal Policy stress on mobilising household savings through tax concessions may increase the interest payment obligation and thereby create a greater problem of plan financing in future. □

Surgical and scientific instruments to cover more items

THE BROAD GROUP of "Surgical, Industrial and Scientific Instruments" industry which has been de-licensed will include the following industries :

(a) Surgical Instruments—Steriliser, Incubators and the like ·

(b) Water meters, steam meters, electricity meters and the like ;

(c) Weigning machines ,

(d) Scientific Instruments ;

(e) Mathematical, Surveying and Drawing Instruments.

Keeping in view the need to stimulate industrial growth and simplify the industrial licensing policy and procedures, Government had earlier announced a list of 25 broad groups of industries which have been de-licensed. □

Hindustan Zinc miantains high standard

Hindustan Zinc Limited, a Government of India enterprise, achieved new heights in zinc and primary lead metals' production during the first ten months of 1985-86 There was an increase of 20 per cent in zinc production and 12 per cent in primary lead production during April 1985—January 1986, over the corresponding period of last year.

Vizag Zinc Smelter continued to operate above the rated capacity for the third consecutive month, producing 2853 tonnes zinc metal, corresponding to 114 per cent of capacity utilization. Similarly, Agnigundala Mine and Tundoo Lead Smelter also continued to perform over their rated capacities during the month of January 1986.

Is funding of Seventh Plan ticklish ?

Dr. A. K. Pandey

The author here is of the view that the funding of the Seventh Plan is going to be rather difficult. Because our past experience shows that the resource mobilisation has been very ticklish despite our remarkable progress in agriculture, industry, power generation, crude oil production, etc. The factors responsible for this situation, the author points out, include decline in savings rate, increase in non-developmental expenditure and the disappointing performance of the public sector. How to overcome the situation ? The author suggests solutions.

THE SEVENTH FIVE YEAR PLAN (1985—90) has finally envisaged to embark on a bulky investment of Rs. 1,80,000 crore in the public sector alongwith an equally big chunk of investment amounting to Rs. 1,40,000 crore in the private sector. The proposed total investment under the public sector is almost equivalent to the total amount of public sector investments made during 34 years of planning so far. In view of the proposed target of growth and the guiding principles of the plan, viz., an annual growth rate of 5 per cent, equity, social justice, self-reliance and improved efficiency and productivity, the outlay under the public sector seems quite reasonable. In the words of the Prime Minister, Mr. Rajiv Gandhi, it is a major step towards preparing the economy to enter the 21st century with very high productive efficiency in every field based on a high level of technological breakthrough. The various objectives, sought to be achieved from the long-run perspective with special emphasis on removing the entire backlog of unemployment by creating 40 million additional jobs during the plan-period, are likely to entail heavy expenditures. Hence there can be no escape from the responsibility of mobilising sufficient resources so as to meet the plan requirements. In fact, the success of any plan depends on the consistency between the targets to be realised and the financial resources available for the same.

The bitter experience

The planners have had bitter experience during past plan period with regard to actual resource position in the economy. Because of this the country has always lagged behind targets. Of course, we cannot deny that there has been remarkable progress in the fields of agriculture, industry, power generation, crude oil production, cement, basic metal, machinery and chemical products. Besides, the country has also progressed from the points of view of institutional and entrepreneurial developments as a result of which we can boast of having the third largest pool of skilled and technical manpower in the world today.

But, despite all these achievements, the country has lagged behind targets in all fields despite food self-sufficiency, industrial breakthrough, manpower development, or infrastructural facilities in the economy.

The sanguine hope

Since the Seventh Plan envisages to overcome all the past inefficiencies and make the economy more efficient through high technology so as to move faster for entering the new century as a dynamic nation, the resource position of the country has to be viewed seriously. The most worrying problem is going to be that of resource vortex before the public sector in this plan. According to the latest review of the resource position, the Planning Commission has project-

ed a resource gap of Rs. 11,000 crore and, at the same time, is quite hopeful that the gap will be within our reach and will not generate inflation in the economy. The Planning Commission pin-points this success on 26 per cent of savings to be mobilised during the plan period.

Against constraints

But in view of past experiences as well as prevailing unfavourable situations in the economy, one can easily predict that the current plan is going to be confronted with resource constraints. The bitter experiences of the Sixth Plan should be taken as guidelines for the present plan. There was about 24.7 per cent shortfall in the states plan outlay and 21.8 per cent in the case of the centre during the Sixth Plan. Consequently, it suffered a heavy shortfall in the achievements of physical targets in vital sectors such as power, irrigation, Cement, edible oil, etc., mainly on account of resource constraints. Of course, to some extent the Sixth Plan could tide over resource crunch on account of some favourable situations in the economy such as rise in the domestic productions as well as prices of oil, large import surpluses financed through the I.M.F. loans, remarkable performance of the agricultural sector and satisfactory foreign exchange position consequent upon impressive export performance, etc.

Low investment in oil sector

But the situation at present is quite changed to the disadvantage of the public sector in particular and the economy as a whole in general. We can no more bank on the oil sector so much since the output of oil has declined and it is likely to deteriorate further unless heavy investments are made for exploration and exploitation of new sources. Unfortunately, the current plan outlay for the oil sector has been reduced by more than 50 per cent. Further, we are no more in a position to finance import surpluses through external loans unlike during the 6th plan. A significantly much higher rate of growth in the agricultural production will be required which is full of uncertainties. The past shortfall in industrial growth will also add to the problem of resource position during the current plan. The prevailing high corporate tax (68 per cent) together with infrastructural constraints will further lead to stagnation in the industrial sector.

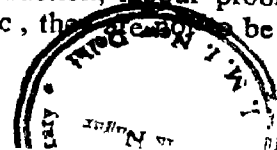
The decline in savings

Apart from all these, the burden of huge I.M.F. loan and unfavourable conditions in international capital market will also aggravate our resource position during this Plan. As we know, the gross figure of repayments will be around Rs. 30,000 crore including the I.M.F. loan (Rs. 5,000 crore) during the plan period. Furthermore, in view of the Government policy to limit monetary expansion so as to have growth without inflation, the scope of borrowings from commercial banks is also limited. The anticipation of 26 per cent savings is also contrary to the actual savings position of the economy. As we know, the rate of saving has rather declined from 25 per cent in 1978-79 to 23 per cent at the present moment. In view of increasing cost conditions, high capital output ratio and colossal black money dominating the economy, the anticipated rate of savings (26 per cent) is unthinkable. This will prove a major shock in the field of resource mobilisation for the Plan investment.

The growing non-development expenses

The worse aspect of the resource crunch emanates from the ever-rising ratio of our nondevelopmental expenditures in the economy. The rate of growth of non-developmental expenditure emerging on account of defence, grants to states, subsidies and interest payment, etc. has been always increasing and such expenditures are bound to increase in future as well. Because of underground war preparations going on in our neighbouring countries, we can't remain silent observers. At the same time, grants and subsidies are bound to increase in a welfare state like India. As we know non-developmental expenditures constitute about 40 per cent of the total central expenditure and it is expected to go up to 44 per cent in the coming years. In this way there will be heavy resource-drainage to the great disadvantage of the economy during the current plan period. Due to the vulnerability of the primary sector, our increasing dependence on imports for even basic consumer goods such as edible oil, sugar, pulses, etc. is not going to come down in the near future Rather, future imports are likely to go up very high because of special emphasis on modernisation and liberal import policies. They will, therefore, attribute to resource crisis in the plan period.

The disappointing public sector

The Government is not yet clear with regard to its future export policy even. The very tax structure which has anti-export bias will also aggravate the resource crisis in the Plan. For such a huge task of resource mobilisation we cannot be hopeful about our public sector enterprises also. We have very bitter experiences about their past performance. Out of about 209 public sector enterprises hardly 50 per cent of them generate surpluses and the rest are never out of red. There has been a sharp decline in the net profit of these enterprises to the tune of Rs. 246 crore in 1983-84 and, at the same time, the loss-incurring units have suffered heavy deficit till the recent past to the tune of Rs. 1533 crore during the same period as per the 1984-85 Economic Survey Report. Since the public sector enterprises are still confronted with the same problems such as infrastructural constraints, rising cost of production, labour problems, low technological level, etc , th[illegible] be relied upon for

a big surplus in the near future. The capacity utilization of all industries taken together is between 50 to 55 per cent only. This is a big slur on their part which is equally responsible for low surpluses. In view of this situation, our resource position is not going to improve and so we should not expect too much from our staggering public enterprises.

So far as the position of external assistance is concerned, as we know, we are already overburdened with the load of repayment of I.M.F. loan which has started with the very outset of this plan. So, from this field also we are not going to get adequate financial assistance. The inflow of foreign remittances from residents abroad is also not going to improve the situation as too much uncertainty prevails in this field.

Deriving maximum out of minimum

Thus a host of problems in different fields of the economy will not allow us to raise adequate resources for meeting such a huge public sector investment So, wisdom lies in going ahead with this Plan within the limits set by the amount of available resources in the economy. By merely having a very big and bulky plan we are not going to get the physical targets realised as in the past. The planning rituals must be stopped with immediate effect because the real success of the Plan will ultimately depend on how far we will be making the best use of resources available at our disposal and in what proportion the unutilised capacity is going to be harnessed in different fields of the economy. Also, a sizeable reduction in the non-developmental expenditures is urgently required so as to get the maximum out of the minimum. If such steps are not taken before hand, it will push up the limit of deficit financing set at Rs. 14,000 crore which will in turn foil our attempt to have a non-inflationary growth with higher productivity Besides, a lot of measures, viz., administrative reforms, creating conditions for a healthy competitive economy, improvement in efficiency and productivity allround, modernisation, enhancement in capacity utilisation and decentralisation in planning will have to be speeded up to make this Plan more realistic and successful with regard to resource position. A flabby and half-hearted approach will leave this Plan in the vortex of resource constraints leading to stagnation and frustration all-round.

New housing projects under HUDCO

The Housing and Urban Development Corporation (HUDCO), a public sector undertaking under the Ministry of Urban Development, has sanctioned 112 new housing projects worth Rs. 75.80 crore spread over 13 States and the two Union territories. These schemes will predominantly benefit the economically weaker section (EWS) and low income group (LIG) families both in rural and urban areas.

HUDCO is committed to provide loans of the order of Rs. 52.45 crore and on completion, these new projects will provide houses for 55,775 families of different income groups of which 52,135 houses will be for EWS and LIG families. In addition, these sanctions provide for development of 4,457 plots and basic sanitation facilities Over 50 per cent of these houses are for the EWS families in rural areas of Andhra Pradesh and Kerala

With this, HUDCO's operations now extend to over 730 cities and towns and several thousand villages in 21 States and five Union Territories. The total amount of loan sanctioned is of the order of over Rs. 1,930 crore with project cost of about Rs. 3,000 crore for construction of over 2 2 million dwellings. It also provides for two lakh developed plots and improvement of basic sanitation facilities in terms of conversion and construction of latrines to benefit 1 6 lakh families Eighty eight per cent of the families having monthly income of not exceeding Rs 600 will benefit from the HUDCO loan assistance.

The beneficiary States of these new sanctions are Andhra Pradesh (Rs 10 25 crore), Bihar (Rs. 2 44 crore), Gujarat (Rs 3.19 crore), Himachal Pradesh (Rs. 0.15 crore), Karnataka (Rs. 3.38 crore), Maharashtra (Rs. 1.45 crores), Orissa (Rs 1.04 crore), Punjab (Rs. 1 31 crore), Rajasthan (Rs. 0.84 crore), Tamil Nadu (Rs. 4 65 crore), Uttar Pradesh (Rs. 4 93 crore), Union Territories of Goa, Daman & Diu (Rs. 0.41 crore), and Pondicherry (Rs 0 84 crore). □

(Contd. from page 9)

Thus one cannot say on the basis of LFP that the fiscal profile at the end of the eighties would be more progressive, more tuned to plan objective, and offering greater degree of freedom to the planners in pursuing avowed but largely avoided objectives. In fact, apart from completing the policy thrust of liberalisation, nothing consequential about the fiscal policy for dealing with long-standing challenges is likely to emerge except the rising not necessarily adequately quantitative magnitudes for financing the plan which is just more of the same, which is promised to be implemented more efficiently. □

Indian economy, how strong today !

S. Ananta Charlu

The mid-year assessment of the country's economic performance released by the Reserve Bank of India on January 7, 1986, cautions against the emerging resources constraints hampering growth. It calls for strenuous efforts to improve savings rate particularly of the public sector to tackle the situation. On agricultural front, it says the prospects are bright. A better Kharif harvest is expected as a result of the sustained rainfall. The report forecasts a fall in the inflation rate but at the same time says that the situation on the price front is not very heartening! The author here briefly reviews the RBI's report.

THE MID-YEAR ASSESSMENT of the country's economic performance released by the Reserve Bank on January 7, 1986, depicts a balance sheet which is on the whole encouraging. The Report, however, did not hesitate to underline some of the weaknesses in the economy which, if not corrected in right time, could spell serious danger to the overall growth. The assessment based on the functioning of the various sectors during the April—September period came handy to the Finance Ministry which was already involved in various exercises of budget-making for the next financial year. An evaluation made by an independent body like the Reserve Bank is naturally more objective than any review of the executive Ministries and therefore should be more helpful in reshaping the policies wherever warranted.

The Reserve Bank's study was based broadly on the performance of four major sectors—agriculture, industry, credit and money supply and the external trade and balance of payments position. It finds the external sector clearly "worrisome", while the growth prospects in the other three sectors encouraging.

The worries

Let us look into the worries first. The balance of payments position has worsened in the first six months of the current financial year. The trade deficit, in the first four months alone, recorded a steep increase of 81 per cent over the figure for the corresponding period of last year. The reasons are not far to seek. For instance, in the first six months the exports have increased only marginally while the import bill has shot up by 30 per cent. Added to this are : one, the slowing down in the flow of external assistance, and two, increase in debt-service obligations. The report says that in view of this, far from encouraging situation, the export growth assumes critical importance for further development of the economy

But, increasing exports is not going to be an easy task in the context of the present international trade environment. The RBI Report says that though the world economy has come out of the recession of the preceding four years, the recovery has been uneven. Further, though the volume of world trade did expand by 8.8 per cent, the high level of unemployment and the increasing imbalance in the current accounts position of major industrial countries have caused protectionist tendencies to get stronger.

Resource constraints

The Reserve Bank also points out to another area where the Government has to exert with greater vigour if the development tempo envisaged in the

Seventh Plan is to be kept up. The report says that there are indications of resource constraints emerging as a factor inhibiting growth in the medium term. This calls for strenous efforts to improve the savings rate, particularly of the public sector. The huge investments made in the public sector should earn adequate returns through better management and operational efficiency.

This gloomy side need not, however, depress us unduly. The current assessment of agricultural growth and the expected increase of about 6.5 per cent in industrial production promises that the economy in 1985-86 will, afterall, turn out to be better than in the previous year. With this there will be three successive years of good growth. These will surely provide the base on which to build the capability of sustained growth of five per cent as estimated in the Seventh Plan. They will also help in facing the mid-term problems of resource constraint and balance of payments.

Better foodgrains prospects

The sustained rainfall in early October and the increase in fertiliser consumption have revived hopes of a better kharif harvest. It is estimated that the output of both paddy and coarse grains will exceed the previous year's production. The output of pulses is expected to go up by over 10 per cent. With the increase in areas under assured irrigation and high yielding varieties, the production of rabi foodgrains may also set a new record. There is thus a reasonable prospect of reaching a level of around 156 million tonnes, though this is slightly less than the target set for foodgrains in 1985-86.

The prospects of other crops are, however, not very encouraging. The production of jute and mesta may be higher but that of sugar cane may remain at about the same level as last year. The outlook for oilseeds is also not good because of the drought conditions in major groundnut growing areas.

Even industrial production

Now, let us turn to industries. The production in this sector during the first quarter of the financial year has increased only by 6 per cent. The increase during the corresponding period of the previous year was 6.8 per cent. This need not discourage us. According to available data for the subsequent period, infrastructure industries have shown a marked improvement in their performance which will eventually lead to higher production of industries. Despite a decline in hydel generation, total power output has gone up considerably in the subsequent three months. Coal production, which had recorded a sharp decline in April and May, 1985, has also recovered. There has also been some increase in the production of crude oil.

Further, the major changes announced by the Government in its fiscal policy, and in other areas relating to industrial licensing and exports and imports together with the relaxation in rules regarding capital issues, will together result in better capacity utilization, encourage investment and generally stimulate production.

Prices and inflation are issues that worry not only the housewife but also the planners and all others involved in productive economic activity. Though the Reserve Bank is hesitant to hazard a forecast about the behaviour of prices during the remaining months of the current year, it finds that the inflation rate is heading for a fall. It is likely to be much lower than the 7 4 per cent increase recorded last year. There are two reasons for this: a relatively lower monetary expansion during the first half of the year and the cautious credit policy followed by the Reserve Bank.

Lower money expansion

The expansion of money during the April—September period was 6,077 crore rupees, a six per cent increase. This is perceptibly lower compared with that in the corresponding period of 1984-85, when the increase was about 7.8 per cent. The slower monetary expansion was attributable to less bank credit to the commercial sector and also to the decrease in foreign exchange remittances. The tight credit policy of the Reserve Bank during the busy season also gave hope that the monetary expansion during the year could be restricted to a level lower than the annual average recorded during the last three years. It is heartening to note that the prices remained at a reasonably controlled level as a result of the lower expansion in money supply interacting with a comfortable supply situation mainly of wage goods. The Reserve Bank, however, says that there is no room for complacency. It points out that while the overall price trend is one of moderation, there are pockets of price rise, especially in the case of some essential commodities. For instance the price of cereals had gone up despite the huge stocks and similarly the price of sugar went up despite imports.

The Reserve Bank is a bankers' bank. But it is much more than that. It also serves as a vigilant watch-dog of the Nation's economy. Its mid-year assessment provides the most useful guidance in our onward march to a better future economy.

(Courtesy : Spotlight, AIR)

Industrialising tribal areas, boon or bane !

I. Udaya Bhaskara Reddy and
R. N. Chattopadhyay

Several industrial projects are being established in our country for the development of backward and tribal areas. However, these projects, besides inducing some significant economic benefits, also caused large social and economic disasters, which adversely affected the traditional way of tribal life. In this paper, the authors attempt to describe such undersirable affect on the tribal life which created maladjustment in the society under transformation.

THE PROCESS OF SOCIO-ECONOMIC DEVELOPMENT initiated under successive five year plans had given scope for the establishment of various large scale industrial projects in resource rich, but paradoxically backward tribal areas. In India, great stress has been laid for rapid industrialisation after independence, to achieve a balanced regional development. Most of the areas in which raw materials are situated lie in the tribal belts of eastern India. These areas are opened up for the exploitation of various minerals like coal, bauxite, manganese etc. Since independence a number of large industrial projects like, steel plants at Jamshedpur and Rourkela, the coal mines at Hazaribagh and Dhanbad district, heavy engineering industries at Ranchi, Orissa cement factory at Ranjanaguda, Hindustan Aeronautics at Sunabeda, and NALCO Complex at Koraput District, have been executed in backward tribal areas of eastern India. Besides, a number of power and irrigation projects are also set up in these backward tribal areas. Thus industrialisation has come to the tribal areas in a big way and a fast socio-economic transformation is envisaged.

Large scale displacement

All these projects had caused widespread displacement of tribals from their ancestral habitat and loss of their traditional occupations like agriculture, forestry and associated activities Although compensation is paid to them for the loss of land and home, and sometimes, they have been also provided alternative sites, but in most cases, the government or the concerned organisations think that their responsibility ends with the payment of compensation This has led to mass upheavals and a great deal of discontent. These large projects have induced positive changes like transformation in their social, economic and political life, but also brings undesirable changes which adversely affected the traditional life of tribal people. The emergence of the industrial complexes, in the heart of tribal belt differently affected the villages. While some of the villages have been uprooted and adversely affected, some other villages located away from the industrial core have undergone selective acculturation under the influence of subsidiary industries. Thus the breakdown of a stable society and stable organisation always causes a disorganisation or disintegration in the socio-economic sphere of tribal life.

Impact on tribal economy and society

The introduction of money economy has led to radical changes. The villages which were once more or less self-sufficient in economy, have now to depend on the market for most of their requirements. The people show an increased tendency to purchase fashionable goods and spend most of their compen-

sation money on dress, cosmetics and liquor. Their earnings and purchasing capacity have increased no doubt, but their needs have also been multiplied. Further, due to rise in the most of living around the project areas, it has been becoming very difficult for them to maintain the living standards. The arrival of technological advancement has brought the tribal villages into the larger economy and thus a new process of change has begun. The traditional economy, which mainly rested on agriculture, is no longer the source of income. Thus, they have changed their occupations and the erstwhile cultivators, have now reduced as casual labourers. Further, due to depletion of forests, these tribals have also lost their subsidiary incomes from forest resources

The tribal societies, which were once closed and integrated are becoming loose and discrete. Joint families have been broken and nuclear families have increased. The people have become more materialistic and individualistic Inter-personal relationships, which were once based on kinship ties and sense of familiarity has become more impersonal and indifferent. They have developed an apathy for their traditional songs, dances, and ornaments They have also lost the homogeneity, which is a tribal characteristic Tobacco, ganja and bhang are also consumed in large quantities Instead of the native rice-bear, the distilled liquor which is harmful and more intoxicating has become popular. Further, the breaking up of village organisation and corporate life, along with acquiring many habits like excess drinking, use of cosmetics and costly dress etc have drained away most of their resources

The importance of religion in tribal life is declining slowly. The duration and glamour of traditional religious ceremonies and dances connected with them have diminished The community festivals which were once very important to the social organisation, have lost their charm and attraction.

Environmental pollution

The establishment of various industrial projects have also brought environmental hazards, which will ultimately harm the life of man, animals and plants. For example, the implementation of NALCO Complex in Koraput District has created hazards like ; the open cast mining can generate 0 25 kg of dust per metric tonne of bauxite mining during digging, stock filling, loading and drying operations. In addition, significant air pollution from exhaust fumes during heavy vehicular movement and noise pollution will take place when the project is finally implemented. This in turn, affect the spread of diseases to crops, men and animals.

Social readjustment

The process of their adjustment to the changed situation and surroundings is not free from hazards and obstacles. Some of the families and individuals being unable to face the change prefer to resettle in rural surroundings to continue their peasant way of life. The majority of them, however, take up the challenges of industrialisation. Thus the process of social transformation is a delicate issue and it should be tackled carefully in order to motivate people to adjust with the new urban and industrial culture.

Suggestions

One of the major drawbacks of rehabilitation programmes has been lack of proper planning. In the present paper, it is not possible to discuss all the aspects of development. Some suggestions would be relevant.

First, it is necessary that the evacuation of displaced families should be done in a phased manner The selection of site should be done in accordance with the linking of the people, because the tribals particularly have a great attachment to the soil There should be proper caste|tribe grouping in colonies to ensure cohesion and unity in order to avoid conflicts

Second, the compensation may not be paid in cash fully. It is suggested that it may be given in cash and kind including land for proper rehabilitation

Third, various vocational training programmes suitable for tribal aptitudes, should be started to enhance the skill among affected tribals, who could be eventually absorbed in the projects.

Fourth, minimum facilities like drinking water, approach roads, dispensaries supply of food materials at the initial stages, communication facilities etc should be provided in the resettlement colonies for proper readjustment.

Lastly, proper attention should be given to the environmental protection and proper care should be taken for maintaining ecological balance in the project areas.

Conclusion

The various suggestions put forward here are of prime importance for planned rehabilitation of the affected people. It is worth mentioning here that without proper and effective rehabilitation of uprooted people the very cause of tribal area development through industrialisation is lost. Besides, the future prospects of the projects are also dependent on how peacefully these uprooted people are resettled. □

Planning for tribal development

(Kerala's Experience)

S. C. Bose

In a special study of the tribal development in Kerala, the author observes that various schemes have not improved the condition of the most vulnerable and poor groups of the tribals. There is great disparity, he finds out, in the economic, social and educational development between these tribal communities. The most deserving poor sections and backward areas have been neglected. The life of the tribals, by and large, remains un changed

As has been aptly said, "Planning now excites little enthusiasm and provokes intransigent opposition only from a few die-hards". This is because 'Planning' has been accepted by one and all as an essential instrument for speedy economic development. Decades ago Alfred Marshall asked a very pertinent question : "Is it really impossible that all should start in this world with a fair chance of leading a cultured life free from the pains of poverty?" We now know that the answer to the question posed by Marshall is only a categoric "NO". Yet, we are faced with a lot of problems in enunciating and implementing plans for the development of 'General Welfare' in a country like India. The devoted pupil of Marshall, Prof. A. C. Pigou wrote . "Wonder," Crylyle declared, "is the beginning of Philosophy. It is not wonder, but rather the social enthusiasm which revolts from the sordidness of mean streets and the joylessness of withered lives—that is the beginning of Economic Science". In a way the beginning of Planning Studies also can be traced to the poverty, miseries and the degradation of a vast majority of people in the world.

If 'Planning for General Welfare and Development' itself causes problems, planning for a special class of people like 'Tribals' causes much more problems. Yet, since the tribals are living far below the poverty line, the usual developmental plan schemes may not be sufficient for achieving their welfare and development.

The sub-Plan strategy

Hence, it has been found, necessary that an 'Area Development Approach' should be adopted with focus on Tribal Development and Welfare. Thus, the Sub-Plan Strategy was first adopted as part of the National Strategy in the year 1976 in Kerala incorporating the area development approach, and selecting these areas where the percentage of tribal population is more than that of the other non-tribal population.

ITDP areas of Kerala

In the Kerala State, five Intergrated Tribal Development Project Areas have hitherto been identified for implementing the Sub-Plan Strategies. Thus, the ITDP areas are the same as the Sub-Plan areas, for all practical and theoretical purposes.

The following Table (Table-I) gives us the extent of the five ITDPs in Kerala, its total population and the size of its tribal population :

Table I

ITDPs in Kerala and Tribal Concentration

Sl No	Sub-Plan Area	Area in Sq Km	Total Population	Tribal Population	% of Trib. Pop to Total Pop.
1	2	3	4	5	6
1.	Attapady	740.63	39183	16536	42%
2.	Punalur	2662.47	26510	13480	51%
3	Idukki	1062.10	15786	13585	86%
4.	Nilambur	1173.96	15117	15117	100%
5.	Manantoddy	503.06	18549	15244	82%
	TOTAL	6142.22	115145	73962	64%

Source : "Tribal Sub-Plan of Kerala, 1980-85", Government of Kerala

Table-I Shows that area-wise Punalur lies far above the four other ITDPs, but it has, on the other hand, only 51 per cent of tribal concentration, MANANTODDY lies far below the four other ITDPs in size, but it has 86% of its population as tribals. Another important point to be noted is that Attapady Project has got the highest total population of which only 42% are tribals Nilambur Project is in a unique position in that cent per cent of its population are constituted of tribals alone. Idukki Project stands second in the matter of tribal concentration with 86% of its population as tribals. Anyway, it may be noted that roughly two-thirds of the total population of these five Project areas are tribals.

It has to be mentioned here that prior to 1976, Attapady was only a Tribal Development Block. It was in 1976 that it was converted into an ITDP and a Project Report was prepared It is important to note that no projects as such have actually come into existence in the four other project areas Still development efforts have been continued there also with the existing administrative machinery.

Investments in the sub-Plan areas

The following investments have been made in the Sub-Plan Areas till 1979-80, under sectoral Programmes and with Special Central Assistance

Table II reveals that the expenditure incurred by the Tribal Welfare Department has been steadily progressing, as should be the case. The second place goes to communications sector with a total of Rs. 52 74 lakhs, followed by forests with an expenditure of Rs. 29.88 lakhs. Expenditures in vital sectors like Agriculture, Co-operation, Animal Husbandry, Employment and Training are far from satisfactory. This shows that enough care has not been bestowed upon in selecting priorities for the speedier development of tribals inhabiting our forests, mainly reserved and vested forests.

The Tribal Welfare Department has spent the following amounts for the welfare of the tribals living in dispersed areas outside the project areas :

Year	Amount (Rs in Lakhs)
1976-77	106.02
1977-78	102.78
1978-79	125.02
1979-80	114.19
TOTAL	448.81

Distribution of tribal population

In Kerala, there are 35 tribes classified as Scheduled Tribes. According to 1971 census, these 35 tribes and some unclassified tribes constituted the total tribal population of Kerala They numbered 2,69,356 of which 1,34,996 were Males and 1,34,360 Females. But, as per the socio-economic survey of Scheduled Tribes conducted by the State Bureau of Economics and Statistics during 1976—78, the tribal population of Kerala is 2,00,042 in 41,452 households comprised of 3,469 hamlets or settlements Of these, population of 73,962 (see Table—1) is included in the aforesaid five Integrated Tribal Development Projects. The remaining 1,26,080 persons are living dispersed outside the project areas

Table II

Investments in Sub-Plan Areas

Sectoral Programme-wise (1976-80)

Sl. No	Sectoral Programmes	1976-77 Rs in Lakhs	1977-78 Rs. in Lakhs	1978-79 Rs in Lakhs	1979-80 Rs in Lakhs	Total Rs in Lakhs
1	2	3	4	5	6	7
1.	Agriculture	1.05	5.00	5.00	7.96	19.01
2.	Co-Operation	2.17	0.01	8.00	3.44	13.62
3	Forests	0.22	3.70	5.50	20.46	29.88
4	Communications	10.67	10.00	10.00	22.07	52.74
5.	Animal Husbandry	1.50	3.75	4.00	3.00	12.25
6	Water Supply	3.11		4.00	16.14	23.25
7.	Soil Conservation	6.19	—	8.00	8.98	23.17
8.	Employment & Training	0.24	—	—	—	0.24
9.	Tribal Welfare & Development Dept	9.57	20.00	33.20	39.20	101.97
	TOTAL	34.72	42.46	77.70	121.25	276.13

Source . "Tribal Sub-Plan of Kerala, 1980-85", Govt of Kerala

Planned social change

A comparative study of the tribes reveals that Mala ayans, Kannikkars, Kurichians, Ulladans and alis are advanced in the persent, socio-economic -up in the State. But Kattunayakkan, Paniyan, ruman, Hill Pulayas as also Korages, Kadars, rumbas and Cholanaickans (the 'Cavemen of rala') still remain very backward both economilly and educationally In fact, Kurumbas of Attady and Cholanaickans of Nilambur forests are still the 'Pre-agricultural' stages of economy and hence ey have been identified as 'Primitive Tribes' Some re tribes like the 'keragas' of Kasargode and the adars' of Chittur Taluk can also be considered as imitive Tribes.

Among the 35 Tribes, 'Paniyans' are the largest oup with a population of 46,700 (23 37%) of e total tribal population and they are on the west rungs in the matter of economic development he next largest group is 'Mala Arayans' numbering ,547 (12 27%) They are one of the most 'prosrous tribes' with a large areas of lands in their ssession and are fairly advanced in education

Economic status

It is estimated that 76.34% of the tribal popula-n are below the poverty line Out of the 41,452 ibal households, 29,172 (70 40 per cent) possess nd, the average size of the holdings per family being 3. acres, per capita holding being only 33 cents ut of the total tribal land of 65 650 acres, only 8,800 acres are under cultivation Of the unculti-ated land, 69.13% of the area is left uncultivated ue to lack of finance and 11.64% due to lack of rigation facilities

It has to be noted that during the decade 1967-76, ,546 out of the total 41,452 tribals households uffered loss of 9,859 acres of land due to 'alienation' 6 25% of such cases and 92 06% in area out of e above were 'alienations to non-tribals', and this as since become a grave problem faced by the ribals, in spite of existence of lots of laws to urb this 'dangerous trend'

Literacy

The percentage of literacy among the tribes is nly 26.55%, while that for the general population s 60.42 per cent as per 1971 census Literates are more among the 'Kannikkars' and the 'Mala Arayans' including a large number of Christian converts) Of he literates among Tribes 51 67% are below primary evel, 29.57% below upper primary, 11 83% upto 0th standard and only 3 65% have passed S S L.C xamination Only 22% of the tribal children below he age of 15 are attending schools, leaving out the ery young; about 62 69% of the tribal children of chool-going age are detained at homes.

Housing

Housing is another problem for the tribals. 86.55% of the tribals have their own dwellings, while the remaining mainly live in the houses of close relatives. Out of 41,345 families, 25,243 live in huts; 11,190 in Katcha houses, 2,268 in semi-pucca houses and only 2,644 in pucca houses.

Dismal picture

It is painful to note that the schemes for tribal development so far implemented and the investments made by the Government have not improved the condition of the most vulnerable and poor groups among the tribes. Besides, there is great disparity in the level of development, economic, educational and social, between different tribal communities and there is also great regional imbalance. The more deserving poor sections and backward areas have been neglected

In short, as has been openly admitted, "an assessment of this present stage of development obtaining in many tribal areas presents a dismal picture Except among the articulate tribals, we find an overall decline in the level of living of the other tribals The benefits have not fully percolated to the lowest levels where the tribals live The development which took place has been singularly of the nature that the resources available in these regions are useful for the other already developed areas The total effect is that though some money has been ploughed into the region, the life of the tribals, remain unchanged (Tribal Sub-Plan of Kerala 1980-85 p 4). □

IDBI enters DM Bond market

The Industrial Development Bank of India (IDBI) has entered the West German Capital Market for the first time by raising 100 Million Deutsche Marks (Rs 50 crores equivalent) by way of a fixed rate Public bond issue The Bonds will carry a coupon rate at 7 per cent p a with a maturity of 7 years and are guaranteed by the Government of India

It may be recalled that last year IDBI for the first time and as the first Indian entity entered the Furo-Yen Market and raised a syndicated loan of Yen 10 Billion IDBI also raised Dollar 20 Million in US Capital Market through SWAP arrangement with the Housing Development Finance Corporation against the Guarantee provided by USAID under its Housing Guarantee Programme. Earlier, IDBI had raised two Euro-Dollar loans amounting to Dollar 55 million IDBI has also the distinction of being the first Indian institution to enter the Japanese Capital Market where it made two bond issues aggregating Yen 10 billion by private placement.

Ways to keep heart diseases away

Dr. Satinder Swaroop

Heart diseases are on the increase in India. The author, an angiologist, enumerates causes and cures including peventive steps to avoid these diseases. Interestingly, he suggests Yoga and regular exercises as steps to ward off heart diseases.

India during past several decades has been gradually joining the ranks of the developed countries She has been showing considerable improvement in economic and industrial development. As a result India is also facing the perils of development which means, in India, the heart disease has become quite an important cause of death, just like in any other developing countries Previously in India, the infectious disease was the most important cause of death However, during the past several years, heart disease has become more common.

Heart disease has too many classifications One of them we call congenital which means from birth and another heart disease is what is acquired Acquired means, the people get this disease after they are born

Kinds of heart diseases

In terms of congenital heart disease, the heart disease from birth, an example the like of which you might hear, some baby was born which had a hole in his heart or the baby was blue Many times there are babies who have very low birth weight. All these things are quite common in India Of course, these can be prevented, most of them with rather very easy methods, and all of these are available in India now This does not need highly sophisticated care One of the fundamentals is by helping the mothers when they are pregnant, proper maternal care And if the mothers are immunised against Rebella or the German Measles, the vaccine which is available throughout the world, it has been shown that it will reduce the cause of heart diseases in the children which are born Specially this is a condition where the children are born with extra arteries in the heart

Also when the baby is born, the care during infancy period is crucial And again that care does not require any additional equipments This can be done easily with current available resources in India If these babies after they are born and if they do have holes and other abnormalities, if they are given proper care including antibiotics and the most common antibiotics which we use, that is called Penicillin, which is available in India and also other antibiotics which are readily available If these children are given proper care, especially if they are having dental treatment, if their teeth are kept clean, they are kept away from infection, they can grow up to the adults and lead normal healthy lives

Acquired heart disease

The other spectrum of heart disease which we need to discuss is the acquired heart disease which is a disease which is present when the infant is born She does not have the disease, but during the growth the disease develops The most common of it at present in India, which is still causing lot of disability, is called Rheumatic Heart Disease or Rheumatic Fever. In this disease, the paients have fever lasting for several months They develop swollen knees and ankles and this disease of course is also preventable by very easy methods. In case of children, when they have infections, specially swore throat or what we call as strep throat, which is again very common in India. they can be treated immediately by antibiotics Again good old penicillin will come to our rescue If they are

treated immediately when they develop this infection of strep throat, these patients most likely will not develop Rheumatic fever. So proper care of these children and young adults can prevent Rheumatic fever and also in those individuals who have developed Rheumatic fever, their recurrence, which means having a second attack of Rheumatic fever, can also be prevented by proper care, by methods which are available Penicillin treatment which is continued as one tablet a day will prevent recurrence of Rheumatic fever. Because once a patient develops rheumatic fever and he continues to have it, he would develop severe illness, his value may be damaged, and at that time, he will need very highly sophisticated care So in order to prevent that, if these people are treated at a very early stage, with penicillin which most general doctors can prescribe, will prevent a major disability from heart disease

Adequate nutrition

Another factor which will prevent heart disease is adequate nutrition If these children are given vitamin supplements and in case of adults, if the diet can be improved and if we can reduce the things which we know can damage heart, that can prevent heart disease The most glaring example of heart disease, of course, is what we call the heart attack It is very dramatic You hear of a person who is a young Executive, who has spent years in acquiring different knowledge, education in colleges or starting up a business, he gets around the age of 40 or 42, when he is in the prime of his life, and he develops a sudden heart attack This is very dramatic It has been called as the scourge of nature to the modern world. In previous centuries there were plagues and things like that, which will strike, a famine would occur and the whole population would be dead But now with modern knowledge, those things can be prevented but the heart disease strikes in the prime of life and causing damage to the individuals, to the family and to the country

Prevention, best cure

The best treatment of the heart disease is prevention Prevention is better and cheaper than cure and it certainly is quite true in terms of heart disease or heart attacks As we know, there are certain risk factors Risk means, if a person or a patient has these things he will have more chances of getting heart attacks and the risk factors which have been identified by various scientists are high blood pressure or hypertension, smoking high cholesterol, diabetes, increased stress, lack of exercises, extra weight, and of course hereditary factors Now certain things cannot be changed You cannot change heredity, but other factors can be changed

To start with, the most important causes of heart attack is high blood pressure. And again high blood pressure can be checked and controlled very easily Almost any person, with a few minutes of training, can know how to check his blood pressure. If the blood pressure is found to be high, it can be controlled rather simply by changing diet, and most important would be to reduce the salt intake and to reduce the caloric intake which means to have an ideal weight The ideal body weight as calculated is 100 pounds for 5 ft. females and 106 for 5 ft male and for every inch of height you add 6 more pounds. So, in other words, if a person is 5 ft 4 inches and if it is male, he should not be more than 130 pounds If the person 5 ft. 4 inches is more than 130 pounds, he definitely should reduce his weight

Regular exercise, a must

And of course regular exercise programme The programme should be starting always with an exercise like a brisk walk and can be increased Then exercise for about 15 minutes and then for a cool off period of about 5 minutes Another feature in India, of course, we are all familiar with meditation Now, meditation can be of different forms, religious or otherwise They can help relax the tension, help reduce the blood pressure Smoking is another factor, which again is relatively common in India The smoking should be reduced, because smoking causes not only cancer, but also causes heart attacks and high blood pressure But it is easy to stop if you try to do it The other risk factor is high cholesterol. For that, you have to see a doctor, because they are the ones who can tell you that your cholesterol is high So, you need a blood test for that The way to reduce blood cholesterol is by actually going back to the rural Indian diet, which means no meat or little meat Eggs should be reduced and not more than 2 eggs per week Cheese, the Indian cheese is alright because Indian cheese does not have that much cholesterol The other risk factor is diabetes and that again, there will be family history or a person may be going to the bathroom frequently That can be checked only by a blood sugar examination or urine sugar examination And control of diabetes can be accomplished by diet Drug can also help reduce the cause of heart disease

The other factors are stress and of course as the society becomes more developed, the stress becomes more common and one of the best ways to prevent stress or treat stress is by exercise Because generally what we find if a person has a very stressful job, when the person comes back home, he is tired He does not do any thing after that By doing exercise, you can also relieve the muscle tension which will help in relieving stress. Lack of exercise also has been a major cause of heart disease So, if a person starts on an exercise programme and he maintains it, he would greatly alleviate the chances of heart attack First of all, his blood cholesterol will come down, his blood sugar will improve, and his oxygen carrying

(Continued on page 28)

On removing disabilities of the handicapped

M.I. Habibullah

The World Day of the Disabled is observed on third Sunday of March every year. In this informative article, the author highlights the various measures taken by the Government to improve the lot of the handicapped including the institutional facilities and welfare schemes for them. He expresses satisfaction over the efforts for their all-round development in keeping with the directive of Article 41 of the Constitution of India.

THE WELFARE OF THE HANDICAPPED has been a part of our nation's Five Year Plans and from one plan to another this area has been given an enhanced outlay. Article 41 of the Constitution of India also favours the betterment of the handicapped community The National Sample Survey of India has declared that the population of handicapped in India is twelve million except the mentally retarded. Now the handicapped are classified into four groups They are

THE BLIND : The blind are those, who suffer from

(a) Total absence of sight,

(b) Visual acquity not exceeding 6|60 or 20|200 shellen in the better eye with correcting lenses, and

(c) Limitation of field of vision subtending an angle of 20 degree or worse

THE ORTHOPAEDICALLY HANDICAPPED The orthopaedically handicapped are those. who have a physical defect or deformity which causes interference with the normal functioning of bones, muscles and joints

THE DEAF & DUMB The deaf and dumb are those in whom, the sense of hearing is non-functional for ordinary purposes of life They do not hear understand sound at all even with amplified speech The cases included in this category will be those having hearing loss more than 70 decibles in the better ear (profound-impairment) or total loss of hearing in both ears

THE MENTALLY RETARDED A person will be termed as mentally retarded, if his|her mental retardation refers to sub-average general intellectual functioning which originates during the developmental period and is associated with impairment in adaptive behaviour

Employment of the handicapped

To solve the herculean problems of the handicapped, the Government of India established a SPECIAL EMPLOYMENT EXCHANGE for the handicapped at Bombay in 1957, as the first step for the rehabilitation of the handicapped That Employment Exchange provided jobs for all categories of the handicapped (except mentally retarded) and proved very successful venture Following the success of the first exchange, the Government increased the number of the Special Employment Exchanges to 22 at present in the major cities of the country.

Vocational rehabilitation centre(s)

As a second step. Directorate General of Employment and Training (DGET) set up two Vocational Rehabilitation Centres (VRC) for the Physically

Handicapped one each at Bombay and Hyderabad in June, 1968 with the assistance of U.S.A. Bit by bit, the number of VRCs increased to 14 at present in the key stations of the country including the four metropolitan cities of Bombay, Calcutta, Delhi and Madras. The VRCs assess the vocational needs of the handicapped persons, who approach the VRC.

The VRCs have five types of training for the handicapped, i.e., stenography, cutting & tailoring, carpentry, metal-welding, and spinning and weaving. Each of the five sections have instructors to teach the clients in their respective trades for the handicapped, who undergoes one month evaluation training After the evaluation, the VRC's register the name of the handicapped for employment.

Apart from these, the Government of India established National Institutes for each major category of handicapped to provide national level facilities in research, training, documentation and consultancy and accordingly, the following National level institutions are set up :

National Institute for the Visually Handicapped (NIVH) at Dehra Dun (U. P.), imparts integrated services, including a model secondary school for the blind children attached to this institute This Institute also has a training centre for the adult blind, a school for the partially sighted children, a workshop for the manufacture of braille appliances, a sheltered workshop and the central braille press The National Library for the blind, which also forms a part of the Institute, circulates braille literature in the country.

Ali Yavar Jung National Institute for Hearing Handicapped, in Bombay provided integrated services at the national level for the education, training and research for the hearing handicapped. In Hyderabad, the training centre for the adult deaf and the school for the partially deaf children imparts training in tailoring, sheet metal works, electrical wireman-ship, carpentry, fitting, welding and photography.

National Institute for the Orthopaedically Handicapped at Calcutta concentrates on research and training of personnel for the rehabilitation of the Orthopaedically handicapped persons. A national institute for the mentally retarded was also established in Hyderabad recently for the welfare of the mentally retarded people

The Institute for the Physically Handicapped at New Delhi imparts training to physio-therapists and occupational therapists It also runs a school for the orthopaedically handicapped children. A workshop attached to this institute fabricates orthotic and prosthetic aids for the orthopaedically handicapped people.

As education is an important instrument for bringing the handicapped into the mainstream of national life, the Government of India, Ministry of welfare provides scholarships|stipends to the handicapped students from class IX onwards including for technical studies. The Government of India also provides financial assistance to the handicapped persons for IN-PLANT Training.

Integrated education

In pursuance of the national policy on education, a scheme has been evolved for integrating the handicapped children into ordinary schools. In order to provide integrated education to the adult handicapped persons, the Government of India has identified six centres and it will also develop the teachers training programme. These six centres are: (1) Jamia Millia Islamia, New Delhi; (2) Ramakrishna Mission Vidyalaya, Coimbatore (TN); (3) Banaras Hindu University, Varanasi (U.P.); (4) Pune University; Pune; (5) SNDT University of Bombay; and (6) Utkal University, Utkal. The National Council of Educational Research and Training (NCERT) assists in designing these programmes.

Training centre for teachers

Until the Third Five Year Plan, India had no programme for the training of the blind people. In the Third plan, the Government of India, Ministry of Education and Social Welfare initiated a programme to establish regional centres for the training of the teachers of the blind and accordingly four regional centres (Delhi, Bombay, Calcutta and Madras) have been started. These centres offer training for one academic year to the teachers working in the schools for the blind. These four centres impart training up to 15 teachers of the blind every year. Due to the establishment of these centres, the ability of blind and the teachers of the blind are increasing, specially in Braille script.

Training Centre for Orientation & Mobilitiy (O&M)

Realising the independent mobility of the blind people, the Government of India, Ministry of Education & Social Welfare established an O&M Instructors training programme (for sighted) at National Institute for the Visually Handicapped (NIVH), in Dehra Dun (U. P) in October, 1971 (Presently, the O&M has been shifted to Delhi from Dehra Dun) This is the only national level centre for the instructors of the O&M. The O&M programme in Delhi imparts training up to 18 instructors in a year (6 instructors for every four months) The O&M training has been started under the direction of Dr Richard E. Hoover, who invented the Long Cane.

Aid and appliances

To mark the International Year for the Disabled Persons (IYDP) in 1981, the Government of India launched a scheme for the distribution of aids and appliances to the poor and needy handicapped people according to their disabilities. These aids and appliances (artificial limbs, tri-cycles, crutches etc.) are arranged through some thirty six agencies, which are divided into four zones. The four zones are :

(1) North Zone (13 agencies); (2) South Zone (8 agencies); (3) East Zone (4 agencies); and (4) West Zone (11 agencies).

These agencies include Artificial Limbs Manufacturing Corporation of India (ALIMCO) at Kanpur, All India Institute of Medical Sciences (AIIMS), Delhi; Artificial Limb Centre, Pune; Indian Red Cross Society : Tamil Nadu Branch, Madras and the National Institute for the Orthopaedically Handicapped, Calcutta

Under this scheme, a handicapped person, who wants to avail an appliances (Only those appliances which do not cost more than Rs. 1500|- and not less than Rs 25|- are covered under this scheme) will have to pay 50 per cent of the actual cost of the appliance, if his|his family's income goes more than Rs 750|- and up to Rs 1500|- per month. He will receive the appliance free of cost if his his family income is up to Rs. 750|- per month. Apart from these, to and fro travelling charges will also be paid by the Government (if he|she comes from out stations) If the handicapped is accompanied by an escort, the escort will also get the travelling allowance. The Government of India will also pay at the rate of Rs. 30|- per day up to fifteen days. The Rs 30|- including for his escort If the handicapped comes alone, he will get Rs. 20|- per day as his boarding and lodging allowance

Reward for handicaps

In order to encourage the employers of the handicapped and handicapped employees, the Government of India, Ministry of Education and Social Welfare instituted National Awards in 1969

The employers of the handicapped will receive five awards (one for the employer of the blind, one for the employer of the deaf & dumb, one for the employer of the orthopaedically handicapped and one for the employer of the mentally-retarded and one for the employer of the leprosy cured)

The handicapped employees will receive ten awards (each category of the handicapped employees will receive two awards from the above five category)

Two awards will be given to two outstanding placement officers, who have placed more handicapped persons in a particular year

Two awards will be given for two institutions which have done best works in the welfare of the handicapped in a year.

One award will be given to an individual, who has done best work in a year for the cause of the handicapped. (The employers and handicapped employees may be from, State Government or Central Government or Local Bodies or statutory bodies or corporation or private sector or self-employed handicapped persons).

Group Insurance

The Life Insurance Corporation of India has started a special "group insurance scheme" for the betterment of the mentally retarded people. Under this scheme, the parents| guardians of the mentally retarded children ensure that regular funds will be available for the maintenance of their ward(s) after their death.

Welfare fund

A National Handicapped Welfare Fund with voluntary contributions from public sector, private sector and general public at large was set up in 1983. The funds will be utilised to augment the existing voluntary sector services in the field of handicapped welfare. □

(Continued from page 25)

capacity of blood will improve It will also improve blood pressure. In India, of course the ancient diet or the diet which many people in some of the villages are still taking, are the diets which may be our great grandfathers were taking, are the best diet The bad habits which we have developed because of the Western influence, the meat eating has occurred from the Western influence, the butter and the refined food. In fact, the fibre in the diet which means the dalia and things that will be ideal to prevent heart diseases

If people are really interested in preventing their heart disease I would think when they get up in the morning, they do their yoga which will relax them They can do their exercise and then have a breakfast not of eggs and bacon, but of dalia and non-fat milk. Then they can do their regular work, may be have their blood pressure checked every few months, cut down their salt intake, and may be have another session of relaxation, meditation or exercise in the evening and stay away from smoking, stay away from rich food and watch their weight, and this would go a long way in preventing heart diseases

Tackling earthquake hazards in North East

P.H. Trivedi

The author here discusses vulnerability of North-Eastern Region to the hazards of earthquake and suggests multidimensional approach to tackle on war footing its disastrous effects. In this regard he calls for establishment of a national institute, a large trained reservist force of youth, a programme for assistance for building up of a pool of equipment, research in technology by providing speedier access to affected areas and a separate fund for social or general insurance against such natural disaster apart from creating awareness of the problem.

THE INTERNATIONAL WORKSHOP on Strong Motion Instrumentation held at Honolulu in May, 1978 identified North-Eastern India as one of the six highly earthquake prone areas of the world. In this background a meeting was convened by the Union Agriculture Secretary on March 12, 1979 in which some measures for preparation were suggested Subsequently, the Chairman, North-Eastern Council convened a meeting on June 4, 1979 in which Chief Ministers, Chief Secretaries, scientists, military and para-military representatives were invited. This meeting constituted two Working Groups- one of scientists to make recommendations regarding action for seismic monitoring and prediction programme and another consisting of administrators and civil defence organisations to evolve contingency plans for rescue and relief operations On the recommendation of the Working Groups, an Earthquake Risk Evaluation Council was constituted by the North-Eastern Council in October, 1979 with National Geophysical Research Institute, Hyderabad; Roorkee University; India Meteorological Department, Survey of India; Geological Survey of India; Bhaba Atomic Research Centre, Bombay; Atomic Mineral Division; Indian School of Mines, Dhanbad, Gauhati University; North-Eastern Hill University; Regional Research Laboratory, Jorhat; Wadia Institute of Himalayan Geology, Dehradun; Council of Scientific and Industrial Research; Department of Science and Technology, Government of India; Indian Institute of Geomagnetism; Indian Statistical Institute, Calcutta; Indian Institute of Social Welfare and Business Management; Central Water and Power Research Station, Poona and Assam Science Society having been made members. The Council has held eight meetings hitherto. It has provided an effective forum for exchange of information and ideas among the various scientists and institutions engaged in this field

On the recommendation of Earthquake Risk Evaluation Council, an Earthquake Centre was established in 1981 to coordinate the earthquake prediction related research in the North-Eastern Region. Under this Centre, programmes like Radon emission studies and analysis of seismograms received from six observatories are undertaken. North-Eastern Council has also supported schemes for installation of ten seismological stations, short-term micro-earthquake surveys, repetitive geodetic surveys for crustal deformation studies, etc. There is a proposal to have 35 observatories for seismic surveillance. Out of this, 10 centres are proposed by N E C and the remaining by India Meteorological Deptt., Regional Research Laboratory, Jorhat and the National Geophysical Research Institute, Hyderabad Three centres at Kopili, Khandong and Doyang are being established by North Eastern Electric Power Corporation for which purchase of instruments has been funded by NEC. Seven more centres are to be established for which a decision is to be taken by the Department of Science and Technology.

Regarding the contingency plans for rescue and relief operations, the Working Group had felt that only a decentralised plan was feasible because communication linkages will be disrupted as and when any major earthquake takes place. It was also felt necessary to educate the people and evolve contingency plans to gear the relief operations at the village, district and State levels. Accordingly, the State Governments were advised to develop their contingency plans as no single model was desirable or practicable. As a guideline, the contingency plan of Civil Defence, Assam was circulated to the constituent States and Union Territories. Some pamphlets prepared on this subject were also circulated. The States and Union Territories were advised to arrange training programmes in association with or to avail of training programmes on Civil Defence College, Nagpur. It was indicated that if required N E C. Secretariat could coordinate such training. On the recommendation of the Earthquake Risk Evaluation Council, the N E C. assigned to the University of Roorkee a scheme for studying vulnerability of important structures in North-Eastern Region. The University of Roorkee has completed the studies for Meghalaya and Mizoram and submitted their report. This report has been circulated to the concerned States Governments. During the course of the study, University of Roorkee felt certain difficulties in getting information from other constituent units. The study, therefore, has not made further progress in respect of them.

2. The report has very lucidly brought out some of the important problems relating to the prediction of earthquakes and mitigation of its effects. I may perhaps refer to one underlying apprehension in a candid discussion of this subject The back-log of development in the North-East is recognised to be immense The natural resources for development are in great abundances. This is specially so regarding water resources Harnessing of such resources for power development, flood control, irrigation and ater management is of primary importance for the North-Eastern Region If the schemes undertaken are successfully implemented benefits would not be for the people of the North-East but for some of the neighbouring States also and may be of significance even to other countries. These programmes involve very large funds. The Governments and public opinion in the North-East are united in making the requirements for such projects for development of the region known in all forums. At that stage any discussion regarding vulnerability to earthquake raises the fear that impediment will be created to the progress of devlopmental schemes For this reason it is necessary to ensure that no scare is created among circles involved in taking decisions for investment or initiation of developmenttal projects especially because the apprehensions regarding earthquakes are often founded on very inadequate information.

Earthquakes in North-East

At the same time we cannot afford to be complacent. Enough warning signals have been sounded. There have been major earthquakes in the region. From 1762 to 1957, 42 major earthquakes have been recorded. In the present century, 21 major earthquakes have taken place. Since 1947, 6 major earthquakes have been recorded in the region. The magnitude of the earthquakes has been available only since 1908. Almost all the earthquakes have recorded a magnitude of more than 7 on the Richter Scale. The earthquakes of 1897 and 1950 have been among the most severe ones in recorded history The scale of the problem can be appreciated if we recall that the recent earthquake in Mexico had a magnitude of 7.8 on the Richter Scale whereas in the North-East in 1912 and 1950, earthquakes of the magnitude of 8 and 8.6 respectively have been experienced and the remaining earthquakes have magnitudes only a little less than that of the Mexican earthquake. The Honolulu International Workshop has specifically listed North-Eastern India, Mexico, Taiwan, California, Japan and Turkey as among the most earthquake prone areas.

In the past, major disasters and epidemics had to be endured in a spirit of helpless resignation. This is no longer so regarding epidemics. Regarding most natural disasters, science and technology have already provided answers about their causes and measures for mitigating their effects In the case of earthquakes be state of knowledge appears to be yet not enough to provide basis for precise predictions and yet not so totally lacking as not to afford some scientific basis for guessing trends.

If precise locations and dates of occurence of earthquakes cannot be predicted, areas prone to earthquake and approximations of periods when they could occur could be indicated although with considerable margin for error There is no doubt that no effort or expense should be spared in collecting all possible information derived from the behaviour of structures or from geology for affording adequate basis for such predictions. It is sincerely hoped that the various projects taken up under the Department of Science and Technology and funded through various scientific institutions will receive sympathetic attention to be pursued with vigour and drive

Mitigating effects of earthquakes

Perhaps not much can be done at least in the immediate future, regarding prediction of earthquakes. The problem resolves itself to the consideration of what can be done about mitigation of its effects. In my view there are some major areas for preparation First and foremost is the area of rescue operations as distinguished from relief operations While the States have some contingency plans for floods and cyclone and other similar natural disasters, only Assam has a relief manual for such natural disasters. No State has addressed itself to the problems of earthquake The expertise required is perhaps quite different, the machinery and equipment required for rescue work is certainly very complex and the resources required would be much greater and it may be of advantage to avail of the technical developments in this regard in other countries

The distinguishing feature of earthquakes is that the impact is so sudden and the effects are so staggering, the area effected so large and the disruption of cummunications so total, the shock to the community affected so paralysing that the local administration and voluntary organisations may not be able to activise themselves at least for quite some time. The rescue; mitigation and relief programmes on the other hand need to be administered with the maximum speed and efficiency and at a scale normally not encountered by local administrations. In this context, apart from setting up training programmes the very conceptualisation of the type of preparation and training that are required would pose problems.

The second area is the question of design of structures. The construction of dams and reservoirs has important scientific and engineering problems of design. I am sure that the engineers provide for adequate safety factor for the structures All schemes, however, need to be stretched on the procrustean bed of financial resources. All administrators and planners know the constraints of economy have to be weighed against the dangers from disasters especially when they are only hypothetical. When Shillong was destroyed by the earthquake in 1897, Government decided not to have brick structures but introduced timber and Assam type structures. Recently there are reports that tall cement concrete buildings have caused some sinking of the soil We find that multi-storeyed buildings are coming up in many towns. Should their design not engage our attention?

The other dimension of problem

In the North-East there is another dimension to this problem The hydel resources and the power consumption are geographically not matched The hydel resources happen to be located in hill areas of sparse populations which is generally tribal in its composition. The benefits of hydel generation of power or of flood control measures or of irrigation are also geographically distributed in such a way that populations where resources on the upper reaches are located do not or are not likely to receive such benefits. The risks on account of earth to the reservoirs and dams are, however, likely to be having their worst impact in such areas It will need a considerable exercise of persuasion to have projects of this nature taken up.

The pressures of urbanisation are creatign tall buildings, often even in areas where this price need not be paid by the pressure of population. An instance is Aizawl where numerous tall cement concrete structures have come about. Apart from such structures being not beautiful and no compliment to urban planning, the hazard to soil stability may have been ignored in some areas. The reports of sinking of parts of Gangtok may need to be taken into account in the case of some of the areas in the North East.

Another area is of legislation and regulations. We need to investigate the areas which may be particularly vulnerable and assess the relative safety of structures in them. Some areas may need to be danger zones in which either no buildings are at all allowed or buildings of only one or two storeys and those of timber and Ekra designs are allowed. In some areas heavy load bearing may not be suitable and installation of plant etc , should be avoided

Desirability of a national institute

The National Cadet Corps, Universities, Colleges and schools, voluntary organisations among themselves can provide a very large voluntary force. Experience has, however, shown that such volunteer forces are seldom adequately trained, motivated and equipped to swing into action when they are most wanted and in the most efficient manner The nature of the problem of rescue and relief work in earthquake as earlier stated is different and very intensive training will be required more on the lines of rescue work when disasters by fire take place than on lines of flood relief work. Perhaps it may be necessary to establish a National Institute for earthquake rescue and relief work in the North-East with international assistance

Earthquake insurance

If a programme for insurance can be drawn up for the North-East for earthquake hazards and natural hazards generally. The general insurance schemes have already gone much beyond insurance against riots and civil dis-orders and hazards from fire We may consider having proposals for insuring populations and public utility establishments and not only personal property against such natural disasters Earthquakes by changing the topography and terrain of the land and by destroying community property like tube wells, sources of water, schools, infrastructures like roads hit hardest the poorest of the community. Replacement of such community property always takes time because of inadequacy of resources

Some feasible programmes for disaster preparedness apart from creating awareness of the problem relate to establishment of a National or a Regional Institute with international cooperation ,

a large trained reservist force of youth and the modalities for its creation ;

a programme for assistance for building up a pool of equipment and locating it in some central places ;

research in technology to provide speedier access to affected areas ; and

a separate fund for social or general insurance against such natural disaster.

Horror of nuclear winter

Dr. Yogeshwar Chaturvedi

If a nuclear war were to take place, what would be its aftermath ? One would but shudder to know of the consequences that would follow! There would be a nuclear winter. Because of nuclear explosions, smoke and dust would be injected high into the atmosphere blocking sun-rays to come to the earth and thus endangering all living beings on earth. The author quotes a scientist saying that 'lucky will be those who die; the unlucky will survive and suffer'.

NUCLEAR WINTER STARTED ever since the time the atom bomb was dropped first in the area of New Mexico in 1945 as an experimental tool. Subsequently, at Hiroshima and Nagasaki atom bombs were dropped and after that the destruction which was seen was unparallel in the history. Nobody could believe that what actually happened really was ever thought of. But now, all the scientists are interested in finding what is to be done if the nuclear war proliferates. In 1983, some of the scientists forecast that if nuclear war or nuclear bombs are blasted they will kill all the animals, they will destroy the plants and perhaps the entire human race. But now the most important consideration is that if nuclear war or nuclear explosions start how they are going to effect man-kind. One of the keys to the nuclear winter scenario is whether smoke and dust would actually be injected high into the atmosphere. It will depend upon, whether the rain is going to wash out some of the dust and smoke which will prevent the sun rays to come on earth. The sun rays are very important, for life. It is estimated that the temperature which is going to be produced will be minus 40 degrees Sub freezing temperature will be on earth. Then, in absence of sun rays, the life will be very difficult to live in Somebody has described very nicely that lucky will be those who will die, and the unlucky will survive and suffer. There will not be any light, electricity, communication and those type of situations; they are very important from the point of view of considerations for avoiding nuclear war.

All over the world, there are many nations which have produced the capacity to destroy the world thousands times over. But the destruction one time is more than enough. Because after destruction, nothing will be left in the area. The atom bomb which was blasted in Nagasaki, Hiroshima, the potential of the new bomb will be many times more, could be thousand times or ten thousand times more than what they were blasted in 2nd world war. Now, there are different types of things which need to be considered. What would be the global consequences of multiple nuclear explosions The potential global atmospheric and climatic consequences of nuclear war are investigated using models previously developed to study the effects of volcanic eruptions. The simple example of this effect of volcanic eruption is about an year back. There was a volcanic eruption in Mexico. It is said that it produced, so much of dust that it covered ten mile wide track all around the earth and brought about the temperature changes which are seen in the atmosphere and which are felt all around the world. There is another thing also. That is about the temperature. People think that there will be changing situations where the climatic conditions will decrease temperature, by minus 15 to minus 25 degrees and its effect on the environment would be devastating. Not only that, the sunlight intensity lends surface temperature, ultra-violet radiation, radio active fall out exposure and sunlight

intensity. These important things are going to affect all our things in future. The effects would be extreme cold which will be there for first few months, then after the end of a year, there will be effect on many plants, seeds of temperate plants and these will survive and there will be change in many animal species. Productivity would gradually change.

The acquatic effects are going to be of the cold temperature that will result in widespread ice formation in most fresh water bodies particularly in the mid-Latitude continental areas. Marine systems would largely suffer from the extreme temperature with effect limited to coastal and the shallow tropical areas Acquatic early loss would continue to be felt and population collapse in many herbivorous and carnivorous species in Marine acquatic systems. Long term effects are going to be very slow recovery from these changes. Several species will extinct The other effects are going to be extreme in temperature and low light levels that would preclude virtually any net productivity and crops, anywhere on earth. Subsequently, potential crop productivity would remain low because of the continued much less temperature and sunlight will not be limited, but would be enriched with ultra violet rays. That will reduce precipitation and loss of soil. Bio-tech potential for crop production would largely be restored in long term effects. In the long term effect, on the human environmental systems, they will carry the decreased capacity that could remain severely depressed from prewar conditions and very long period of time. But now-a-days what is happening is that all around the world, everybody has become very conscious about the nuclear winter. Lot of people are predicting what could be the nuclear variables. Recently, there was an article in Los Angelese Times about the nuclear winter prediction and they mentioned that according to the scientists reports and calculations, the average food storage of 15 countries including India, China, Japan would run out in three to eight months if they lost a year's crop as a result of climatic effects, which the scientists think likely in nuclear explosions

The potential effect of these changes are going to be long term things and on human beings, fertilisers herbicides, pesticides and heavy equipment and agriculture. The new study confirms it largely They think that 100 millions to 450 million, people might starve to death. In Africa in the first 100 days after a major nuclear war and even now when new nuclear weapon are being detonated in the African continent, you can imagine, how these changes are going to affect. In Africa, itself, 450 million people can die, when not a single atom bomb is thrown or reaches the soil of Africa. All around the world, now-a-days people are developing certain mechanism by which these changes are bound to happen.

In Delhi, on January 28, 1985, Delhi declaration was made and all the countries in the world were urged that these things should be abandoned. Future progress depends upon how we can control or how we can prevent nuclear war. All around the world, everybody feels that nuclear age education should be given to the school children. Not only that, everybody has a responsibility for changing the nuclear conditions. Lot of nations are spending time, their leaders are meeting and trying to cut down the nuclear arsenal Even physicians have shown social responsibility and played a great role in this task. Last year, the Nobel prize was awarded to two physicians who worked for nuclear prevention affairs. □

Progess of Salem district

Following vigorous implementation of anti-poverty measures under the revised 20-point programme and all round development of industrial and agricultural sectors during the last two years in Salem district of Tamil Nadu, once considered one of the most backward, is now progressing faster to alleviate the suffering of the common man

About 1855.66 hectares of land were brought under irrigation during 1983-84 and 1984-85. Besides, 32,693 families of Scheduled Tribes were provided gainful employment, about 100 villages were supplied drinking water, 21 villages electrified, 6239 pumpsets energised and 2250 biogas plants commissioned As for social and farm forestry 133.65 lakh trees were planted About 81 Primary Health Centres were set up in addition to DANIDA-Health Care Project, funded by Danish government and sponsored by the government of India to ensure health for all people of the district during the last two years. The list of beneficiaries under Integrated Rural Development Programme covered 44,777 families including 2,364 Scheduled Tribes families and 8,188 women

Of the 86,193 Scheduled Tribes living in Salem District 7,070 tribal families alone were benefited during the last two years under the Integrated Tribal Development Programme. Under the programme of Social Welfare Department, 300 tribal families were also helped Milch animals for Rs 5,02,500 and sheeps for Rs. 4,47,000 were provided to the tribals besides electrification of 28 villages during the last two years.

A number of other welfare programme launched for the welfare of the tribals in the district are solar power for 10 tribal villages of Yercand, Kalrayan and Kohli Hills, financial assistance worth Rs. 1 45 lakhs for industrial cooperative societies for mats-weaving and other works in Kalrayan Hills, fruit orchards, in Kalrayan Hills in 1000 acres and coffee plantation in 250 acres, and free housing for 29 tribal families of Pachamalai at the cost of Rs. 2.61 lakhs.

N. Tamilvanan, DFP,
Alagapuram, Salem (Tamil Nadu)

Record growth of agriculture production

AGRICULTURAL PRODUCTION in the country between the five years from 1979-80 to 1983-84 increased at a significantly higher rate of 3.49 per cent compared to the long-term annual growth rate of 2.59 per cent, touching a record 152.37 million tonnes. This clearly indicates that technology application, scientific research, modernisation of techniques and adequate inputs have lent stability to production and provided greater food security.

Production of oilseeds reached an all time high of 13 09 million tonnes in 1984-85 and exceeded the Sixth Plan target of 13 million tonnes. During 1985-86 oilseeds production target has been fixed at 13.8 million tonnes. Production of oilseeds is expected to touch 18 million tonnes mark by the end of the Seventh Plan.

Supply of essential inputs during 1985-86 has also shown a marked upward trend. Fertilizer consumption is expected to go up from 82 11 lakh tonnes in 1984-85 to over 93 lakh tonnes during 1985-86. Similarly certified and quality seeds consumption is to go up by 7.25 lakh quintals in 1985-86 over the previous year's consumption of 82.11 quintals.

For fisheries, 1985 has been a year of landmarks. The total production during 1984-85 reached an all time high of 28 4 lakh tonnes. As much as 5,422 million of carp seed was produced by March 1985 which was 146 per cent more than the Sixth Plan target of 2,200 million carp seed.

During 1985 the Rainbow Trout was hatched and reared for the first time and the first commercial prawn hatchery commissioned in Maharashtra.

To overcome constraints affecting production and productivity of rice in the eastern region comprising Assam, Bihar, Orissa, West Bengal, Eastern Madhya Pradesh and Eastern Uttar Pradesh, a special rice production programme was launched in 1985 to cover 20 blocks in each of these six States with an outlay of over Rs. 26 crore.

Increasing productivity of rainfed areas received special attention during 1985. In the first six months of the year, 73.21 lakh hectares were developed under the micro-watershed scheme. Also, 11.41 lakh hectares of dry-farming land was developed against the annual target of 10 70 lakh hectares. □

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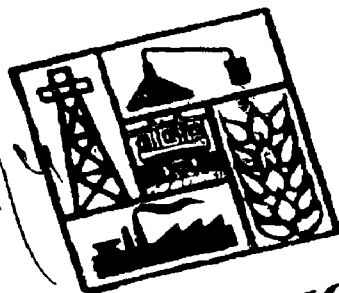
THE LONG TERM FISCAL POLICY announced in December 1985 is intended to impart a definite direction and coherence to the sequence of annual budgets. It is designed to assist evolution of a greater role for rule-based fiscal and financial policies besides providing a much more integrated approach to economic policy and its management. It also seeks to serve as an effective vehicle for strengthening the operational linkages between the fiscal and financial objectives of the Seventh Plan and the annual budgeting exercises during the plan period. In addition, it will serve as a bridge between the five-year financial targets of the Seventh Plan and the annual budgets by providing an indicative, year-wise financial framework for fiscal policy.

The trends in public finances during the Sixth Plan and the budgetary projections for the Seventh Plan excluding additional resource mobilisation indicate the emergence of a serious resource crunch in the public sector, which is likely to persist. Hence a long-term strategy for fiscal management and policy for improving productivity in the public sector.

Fiscal policy involves more than raising resources for the government sector. It comprises powerful instruments for influencing macro-variables such as savings, investment, the price level and costs as well as the allocation of resources. And these must be employed to the best advantage. Indeed, a proper fiscal policy stimulates growth and savings and these in turn lead to a faster rate of growth of government revenues.

For industry, the major tasks of the fiscal policy are to enable it to raise a much greater part of resources needed for its expansion internally and from the capital market than done hitherto; to rationalise and simplify the tax structure in order to make enforceemnt and compliance easier; and to reduce the scope for litigation, disputes and minimise distortions.

Another objective of fiscal policy is to induce a higher rate of savings in the household sector and to reduce significantly the volume of black income generation, to rationalise indirect tax structure, to improve international competitiveness of our industrial products and services with a view to benefiting economy thus leading to buoyancy in revenues.□

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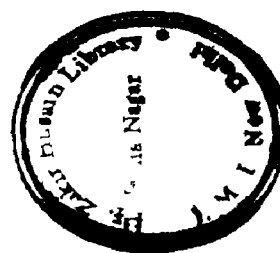
On Centre-State financial relations

NEXT ISSUE

Spotlight on Union budget

Tourism to get boost in Seventh Plan

THE SEVENTH PLAN seeks to achieve an annual growth rate of 7 per cent in the tourist arrivals on account of improvements in the infrastructure and certain degree of relaxation in the policies and procedures for allowing foreign tourists to visit the country.

The Seventh Plan outlay is Rs. 326 16 crore Rs. 138 68 crore in the Central Sector and the remaining amount in the States and Union Territories sector.

The focus of the tourism sector during the Seventh Plan period would be: (i) faster development of tourism, (ii) according the status of an industry to tourism, (iii) re-defining of the role of public and private sectors to encourage the Private Sector investment in developing tourism and the Public Sector investment in developing support infrastructure; and (iv) exploiting tourism potential to support local handicrafts and other creative arts and to promote national integration.

The main thrust areas for development of tourism are in the direction of development of selected tourist circuits or centres; diversification of tourism from the traditional sight-seeing tour to the more rapidly growing holiday tourist resorts; development of non-traditional areas such as trekking, winter sports, wildlife sanctuaries and beach resort, restoration and balanced development of national heritage projects of cultural, historical and tourist importance; exploration of new tourist market in West Asia, South-East and East-Asian countries; launching of a national image-building and marketing plan in key markets; provision of inexpensive and clean accommodation at places of tourist interest; consolidation of operations rather than expansion and improvement in the service efficiency of public sector corporations in the tourism sector; and streamling of procedures at the airports to minimise the time taken in completion of formalities. □

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Zero-base budgeting for better financial management

Shailaja Bapat

Zero-base budgeting is a modern technique applied to the financial management of the Government. The concept was applied in 1975 by the former U.S. President Jimmy Carter when he was governor of the Georgia State. In this article, the author explains how this technique can help avoid unnecessary Government expenditure.

OUR BUDGETARY POLICY is changing for the better. Modern management techniques are being applied to government finance, though under compulsion. Zero-base budgeting (ZBB) is an instance in point.

Revenue surplus

When in 1951, the planning era began in India, it was decided, as a main policy matter, to secure an increasing revenue surplus—an excess of revenue receipts over the revenue expenditure—and add it to the capital receipts for investment in our five-year plans. Thus, in the first five year plan 1951—56, revenue surplus (Rs 738 crore) accounted for as much as 37 per cent of the total investment (Rs 1,960 crores). This absolute amount and its percentage share in the total plan investment were to be increased in each plan.

Now negative surplus

But owing to mainly our traditional system of budget preparation, the revenue surplus began to dwindle, so much so that the 7th Five-Year Plan has been left with a negative revenue surplus of Rs. 12 011 crore It means that not only will the revenue budget not add anything to the capital receipts for investment in the plan but will actually take away the above amount from capital receipts and reduce the total investment to that extent. This is the first time, the Planners are faced with the problem of negative revenue balance. The trend is dangerous and must be checked right now ! ZBB is expected to assist us in checking the trend.

Traditionally, the union budget in India is prepared on the basis of previous year's figures Thus in 1984, for example, a sum of Rs 10 crore was spent on department X. Next year, annual increments would be due to the employees in that department As prices rise, additional dearness allowance will also have to be paid Hence, it is estimated that in 1985, the department X will require 10 per cent more, that is, Rs 11 crore In this way, every year, the revenue expenditure of each department is calculated increased and provided for.

No work valuation

Under this system, no valuation of the work done by a department is made Sometime, in the past, when there was an urgent need, a department might have been created. With the passing of time, that need might have lost its importance. Hence, it might have become necessary to abolish that department or at least reduce its allocation. But such type of assessment is absent under the present traditional system of budget making.

It is alternatively possible that some other more important functions need to be undertaken by the

department. But the allocation of the department stands consumed by old and outdated function either fully or to a major extent. No funds can then be spared for new more important functions which remain either neglected or if performed, are performed in a cursory manner. This is clearly intolerable in a dynamic economy. Indian economy, by comparison with economies of developed countries, is much more dynamic as rapid changes due to economic development are taking place in our economy. So, need for a continuous change in emphasis is much greater in India than in other developed countries. Of course, this is the case of all developing countries at present.

Justify allocations

Under ZBB, each department is required to justify its allocation every year, as if that department is being newly started in that year itself. Hence, its functions and working are x-rayed every year. Further various other methods of performing the same functions and relative costs of each method are calculated each year and compared The posibility of adopting the cheapest method is then explored. This leads to big economies in expenditure on that department as the experience shows. As each item is examined afresh every year as if it was non-existent in the past, that is, as each item is assumed to have no previous base, the technique has the name ZBB.

In a factory, values of the final output and raw material inputs are closely related. The ratio of those values is generaly known to the factory management as it depends on the technical conditions under which it produces. Hence, it does not become necessary to justify the input expenditure every time, when it is incurred, as it reflects clearly in the final production. But in the case of services like research, publicity, packing, etc., no such clear-cut relationship is marked Thus, for example, how much increase in sales is due to expenditure on advertisement and how much due to the expenditure on research as reflected in the quality of the product can never be determined accurately So, such service expenditures are open for annual scrutiny. Hence private firms began to apply the technique of ZBB to their all other expenditures except the one on raw materials.

The concept applied

The concept was originally suggested by Prof. Peter A. Pyhrr. But the credit of its application to the government budget goes to former USA President Jimmy Carter. In 1970s, when he was governor of the Georgia state, he used that technique to cut down the state government expenditure substantially without adversely affecting the efficiency. Under its application it also became possible for the US state governor to identify and evaluate new government activities and various alternatives for performing them and select the best from both efficiency and casts points of view. It was also possible to fix priorities among the various government functions and weed out unnecessary functions which were being perpetuated in the USA year after year in the past. The same is, of course, the case with other countries.

However, it must not be forgotten that ZBB is not a panacea. It does not automatically reduce the unnecessary government expenditure and perform all the functions stated above. The technique must be ruthlessly applied. Particularly the task of evaluating the functions of old departments and determining their utility proves very difficult. So also, annual evaluation is a time-consuming process and if it is not speeded up, the base again becomes outdated. Further, the use of the technique must not be allowed to be just a routine, as indeed often happens with all government activities. □

National poultry board to come up during Seventh Plan

For proper coordination and monitoring of production, processing and marketing of eggs, a proposal is under consideration for establishing a National Poultry Board during the Seventh Plan.

The country has made significant progress in the field of poultry production during the last decade. The annual egg production which was around 7,700 million eggs in 1973-74 has increased to 13,500 million eggs in 1984-85. Broiler production during this period increased from around 9 million to 60 million birds.

Target for the Seventh Plan is to produce 18,900 million eggs and 137 million broilers. In addition to eggs and broilers, Duck and Quail farming has also a considerable potential to be popularised in the rural areas.

Fillip to surface transport in 1985-86

With regard to the surface transport, eight projects on the National Highways costing about Rs. 421 crore have recently been approved by the Government of India which would give much needed fillip to road development in the country. During the first 9 months of 1985-86 the major ports handled 07.06 million tonnes of cargo registering an increase of 14.2 per cent over last year. A new oil berth was commissioned at Vishakhapatnam port in January which has a capacity to handle 4 million tonnes of petroleum products.

for progress on a sound footing

Chowdhry Ram Bharol

In this article, the author discusses merits and demerits of the zero-base budgeting. He feels the technique is basically sound, workable and extremely helpful to middle and senior management as it provides ability to reduce budgets on a rational basis. It is worth applying in those activities where the management faces extreme difficulties in evaluating and allocating resources in administrative, technical and commercial areas. The author is of the view that the zero-base budgeting has a definite development bias and takes into account our requirements for our march towards the 21st Century on a sound footing.

'ZERO-BASE BUDGETING' (ZBB) has had an evolutionary development since its initial introduction. There was an early experimental use of Zero-base Budgeting in the United States Department of Agriculture in planning the FY 1964. In the evolution of budgeting system, ZBB represents an improvement and extension of a number of other systems. For example, performance budgeting provides management with the opportunity to review and budget programmes, instead of simply accounting for their expenses. However, ZBB in its correct context refers to a general management tool which can help improve planning, budgeting and operational decision making. With it managers can reassess their operations from the ground up and justify every rupee spent in terms of current corporate goal. ZBB may look new to many but as Anderson says,, "The concept is nothing more than a logical systematisation of historical planning and budgeting technique. It is, therefore, not a substitute for traditional budgeting approach, rather an improvement over it as its assumptions are critically examined on a regular and systematic basic." A lok at the functioning of various organisations would reveal that the budgeting process that is considered to be important for the planning and control operations of the management is often not taken seriously. And, it does not get that much attention of the management as it deserves It is generally the most neglected activity in the organisation and, therefore, the task of preparing the budget is undertaken by lower managerial staff, i.e., Planning, Monitoring and Evaluating (PME) cell. Their efforts are to prepare the budget mainly on the traditional method of the last year's level of spending. Thus, as a general practice, upgraded budgets are prepared and presented. Over the years, therefore, such a procedure results in a situation where non-essential programmes|activities are piled-up but funds are continued to be allocated to these while the essential and high-priority programmes suffer because of lack of funds.

For it, the Union Minister for Finance, Mr. Vishwanath Pratap Singh said in this budget speech in 1985, that, "The long-term fiscal policy is sought to lift the 'Veil of Secrecy' from budget-making by taking the people into confidence. It was to run coterminously with and subserve the interest of the Seventh Plan. The new fiscal policy is expected to offer more benefits to the industry and the common man, which will be reflecting in the 'Zero-base budget' that will be coming next FY 1986."

The ZBB has a definite development bias and takes into account the country's requirements for progress in the 21st Century. However, over the years, objective conditions have changed calling for new response. I am quite aware that it is not possible to

usher in all the changes at one stroke, yet, we have to initiate a process of reform which can be completed in a phased manner in a time bound frame. Thus we are moving towards the formulation of ZBB technique co-terminous with the budget. In many survey reports, it has been found that the process is basically sound, workable, analytical rather than synthetical and it is extremely helpful to middle and senior management. Actually the guiding principles of Indian Planning are provided by the basic objectives of growth, modernisation, self-reliance and social justice.

Budgeting from 'Scratch'

In wider sense, ZBB means different thing for different people.', rather than starting with last years expenditure the manager starts with the results he or she wants to achieve in a given area and asks :

1. Is it a right area ?
2. Is it a priority area ?
3. What is really needed to obtain these results ?

This would mean that zero-base budgeting is the act of starting budgets from 'SCRATCH' or requiring each programme of activity to be justified from the ground up. In 1970, Mr Peter Phyrr instituted Zero-Base Budgeting at Texas Instruments Incorporation This was the first successful use of the methods as we know it today Although, this was called 'Zero-Base Budgeting' in fact, it did not have the elements of the modern technique and it was successfully used in that experiment. Arthur Burns, in 1969, proposed that all governmental programmes be reviewed from the ground up.

Following the article by Mr. Pyhrr on ZBB, Jimmy Carter implemented ZBB in the state of Georgia In Georgia, the use of ZBB is credited with the reduction of the administrative costs of government by more than one half and opportunity to provide substantially improved service without any tax increases. In addition, a number of companies and research organisations begun experimenting with and using ZBB

Finally ZBB provides for a complete re-examination of all programmes, instead of incremental analysis and incremental budgeting ZBB provides the ability to reduce budgets on a rational basis and reallocate resources without a decrease in the overall budget We find that ZBB can be used in any function of the organisation as it is applicable to all "actionable or discretionary" activities|programmes or costs. ZBB can not be directly applied to direct labours, materials and overheads (LMO) costs associated with production operations. Generally, ZBB may be used in all services, support and overheads activities such as accounting, data processing personnel, and R & D. It is used for those activities where management typically has the most difficulty in evaluating and allocating resources in administrative, technical and commercial areas which effect direct manufacturing costs, such as capital projects, R & D and manufacturing support.

In many organisations, budgeting is looked upon as an incremental activity over past spending level. In forecasting and planning the 1985-86 budget, a traditional incremental approach was on the base of the 1984-85 budget. Accordingly the 1985-86 budget would represent an increase over the 1984-85.

Another comparison may be made between incremental budgeting and ZBB as follows :

For example—suppose the 1985 budget for programme was 2 million rupees, and we would expect a 10 per cent increase in programme activity for 1986. In the incremental approach, the budget would be proposed of 2.2 million rupees. Emphasis would be placed on justifying the increase of Rs. 2,00,000 In the ZBB approach, the budgeting activity would concern with justifying the entire budget request of 2 2 million rupees, not simply the incremental difference from 1985. But in the process of utilizing Zero-base budgeting, the complete budget is examined and a tendency to increase the budget by a flat amount of 10 per cent is rejected.

This approach requires that all activities be identified in 'decision packages' that relate *inputs* (cost) with *outputs* evaluating each by systematic analysis and ranking all in order of importance, with other activities and then allocate funds accordingly. ZBB is a continuous process and not a one for all effect.

What zero-base budgeting consists of?

ZBB deals with a total budget request, not just an increase or decrease over previous year The zero-base approach requires each organisation to evaluate and review all its programmes and existing activities systematically as closely as any proposed new activities It is necessary to perform the following steps prior to the use of ZBB—a statement of the overall purpose of the organisation, specification of long range goals and strategic plans, objectives and development of division and department.

The following are the more important elements of any ZBB programme :

1. Top management support
2. Identify 'Decision Units'
3. Analyse each Decision unit as a "Decision package"
4. Formulate Decision Packages by cost|benefit analysis to develop the budget request.
5. Rank Decision Packages
6. Allocation of funds
7. Clear and realistic goals
8. Assignment of authority and responsibility

9. Creation of responsibility Centres
10. Flexibility.

A Decision Unit:

A decision unit may be a programme, an organisational unit, an activity, a cost Centre, an appropriation item. The decision unit may correspond to the budget unit in those organisations with a detailed budget unit or cost centre structure. Decision units can also be defined as major projects or capital projects. In each case, the decision unit shoud have an identifiable manager. It is necessary to consider the size of the decision unit If too small a decision unit is selected then considerable detail is required with little payoff in the budget process If too large a decision unit is derived, then alternative may not be properly evaluated.

Decision Unit—Project manager+Project team or Activity manager and his team.

The Decision Package Concept:

A decision package is defined as "one incremental level in decision unit. Thus there may be several decision packages for one decision unit. The concept of decision package has in a way revolutionised the whole process of budgeting It is is at the very heart of ZBB. It is the building block of the ZBB concept. It is a document that identifies and described each decision unit so that management can evaluate it and rank it. In formulating decision package it is necessary to assume that each decision unit budget request is made up of a sum of a series of decision packages. Furthermore, each decision package specifies a discrete set of services, activities and resources. The first package, the one that is given the highest priority, represents a minimum level of fund, usually substantially less than the current level say 10 to 20 per cent less The number of decision package is a summary of all aspects of an activity that helps management to take decision. The aspect included are : Purpose of activity, various proposed methods of its performance, alternative levels of performance, costs of its performance, benefits that would accrue to the organisation by its performance and the consequences of its non-performance.

Review & Rank

Following the compilation of decision packages, the next step is to rank all decision packages for a decision unit in descending priority. The ranking may be performed by individual manager. Reviewing and ranking basically eliminate from "How much to spend and where to spend." There are three different questions for ranking : (i) What goals|objectives, (ii) How much resources, and (iii) how many major goals. Thus it is to rank all decision packages for a decision unit in descending priority. The ranking may be performed by individual manager or a committee. Firms have developed extensive techniques for conducting the ranking procedure. At successively higher organisational levels, a series of ranking may be required. It is necessary to consolidate the decision packages for review at each higher level of the organisation order to reduce the date handling problem.

The ranking process establishes priorities among the functions as described in the decision packages. The ranking would be made by top-management to analy e the trade-off among profit centres and specifically to compare the marginal benefits of funding additional decisions-packages against the organisation's profit needs. With the decision packages ranked in order of priority, management can continually revise budgets by revising the cutoff level on any or all ranking.

Benefits of ZBB:

This new system can provide significant benefits at all levels throughout These benefits include-focusing the budget process, a comprehensive analysis of objectives and development of plan to accomplish those objectives, combining planning, evaluate management particularly in planning, evaluation and budgeting, causing managers at all level to evaluate in detail the cost effectiveness of their operation and specific activities both new and old - -all of which are clearly identified

2. Requiring that alternative ways to meet objectives are identified
3. Identifying trade off between and within programmes
4. Providing managers at all levels with better information on the relative priority associated with budget requests and decision
5. It may eliminate duplicative and overlapping programmes
6. It would permit agency to better establish its priorities and allocate scarce resources
7. Budgets need not be recycled when expenditure level change instead of the decision packaging be added or deleted to implement the budget change.
8. The ZBB results in undertaking only essential and high priority schemes in the organisation.
9. The ZBB process forces management to look ahead and become more effective and efficient in administering the business operations. It instils into managers the habit of evaluating carefully their problems and related variables before making any decisions.
10. The ZBB helps to co-ordinate, integrate. and balance the efforts of various departments in the light of the overall objectives.

This results in goal congruency and harmony among the departments.

11. It improves the quality of communication which results in better understanding and harmonious relations among managers and subordinates.

12. It develops on atmosphere of profit mindedness and cost consciousness as projects|programme have, to pass the acid test of objectivity before these are funded, and

13. Last but not the least, it has made the budgeting exercise itself more rational and systematic and less political and arbitrary.

Disadvantages of ZBB:

ZBB is a systematic approach to the solution of problems. But it is not foolproof; it suffer from certain problems and limitation as given below :—

1. An increase in time and effort required for budget preparation. This is very serious problem.

2. A contention that the new system has not significantly affected the allocation of funds.

3. An ineffective view of the decision packages, ranking approach to meet challenge in the level off-funding.

4. ZBB is not an exact science, its success hinges upon the precision of estimates that are based on facts and managerial judgment. Managerial judgment can suffer from subjectivism and personal biases. Thus, the adequacy of ZBB depends upon the adequacy of managerial judgment.

Concluding remarks:

Those who heard this technique as revolutionary and panacea for all ills facing the organisation have to change their thinking to the fact that is neither. Those who look at it as a futile exercise and mark it with a big zero in results, would need to change their views as it seems to be neither. In fact, this technique has great potential if it is not rigidly applied and before implementation tailored to the peculiar needs of the individual organisation in which it is going to be adopted. It is advised that it should not be implemented in haste. As haste may ruin the scheme and chances of success Mr. Peter has recommended that ZBB should be implemented in first year on a trial basis. A trial thus can be made first in one department in the organisation and later on can be extended to other departments. Thus, it can very well be said that in India we have plenty of scope of the adoption of this technique both in industry and government and also in other non-profit making organisations. However, people doubt its successful implementation in the government. The obvious reason seems to be unwillingness on the part of management to part with their pet programmes. This is because over the years, vested interest gets developed in the continuation of the programmes|activities which on the basis of any logical reasoning would have been abandoned long back. This would require persuasive skill to convince people to see for themselves the benefits arising out of its implementation. Those who do not become party to this should be tackled through political strong will. □

More workers to get medical care

The Employees' State Insurance Corporation is likely to commission ten more hospitals to provide medical care to additional five lakh beneficiaries during 1986-87. The scheme will be extended to 581 centres as against 553 at present.

There would be a reduction of over Rs. 16 crore during 1985-86 in the expenditure on cash benefits as a result of the vigilance exercised to curb misuse of lax certification The all-India average of incidence of sickness benefit which was 6 12 days per employees per annum in the year 1984-85 came down to 4 88 days in the quarter ending September, 1985 But, there are still some pockets in some of the states where the situation continues to be bad and it would be necessary for these State Governments to pay extra attention to these areas.

The corporation has approached the UNDP for assistance to provide facilities and expertise for early detection of occupational diseases and for providing treatment At present, it is proposed to establish four zonal centres for detection and treatment of occupational diseases and a start is expected to be made shortly. The Corporation has made arrangements at a number of centres to provide specialists in super speciality areas such as dialysis, kidney transplant, open-heart surgery, provision of pacemakers and neuro surgery.

Special recovery cells exclusively for ESI dues have started functioning in Andhra Pradesh, Haryana, Karnataka, Kerala, Bombay, Punjab and Tamil Nadu Special recovery cells have also been sanctioned in the States of Bihar, Gujarat, Madhya Pradesh and West Bengal and these are expected to start functioning shortly During first nine months of 1985 about Rs. 2.20 crore of arrears were recovered. □

Evolving pragmatic Centre-State financial relations

N. K. Sharma

The author makes a strong plea for enhancing the percentage of divisible share of revenue from the present 85% to 90% to enable the States to meet their growing economic responsibilities. For this, he suggests amendment of the Constitutional provisions on the Centre-State financial relations and transfer some portions of income-tax and excise duty to the States. The author also calls for reduction in administrative expenditure of the Centre and full recovery of basic taxes honestly.

THE RELATIONS BETWEEN the Centre and the States have been explained in the Constitution of India which was prepared soon after India was freed from the British Rule. Almost all the provisions regarding Centre-State relations in the Indian Constitution are those which the British administration framed to have strict control over India according to the circumstances prevailing at that time. The British administration intended to control the States through financial and administrative rules to keep the states mostly in its claw. The British Government could not even imagine the autonomy and financial independence of India. As the Centre-State financial relations, explained in the present Indian constitution, had been formed under such circumstances they provide for wide powers to the Central Government, like the British Government, to control the States which were essential for them.

Centre-State relations

Then the specialists and the framers of the Centre-State financial relations also could not visualise the position of the economic, political and social circumstances of the independent India after 37 years. Therefore, the present Centre-State relationship has become a problem to solve.

In the Seventh Schedule of the Constitution of India there is description about the sources of income for the Centre and States. Centre-States financial relations have been described under article 264 to 282 of the Indian Constitution and the articles 280 and 282 related to the Finance Commission.

Due to the above constitutional arrangements, the analysis of the Centre-State financial relations is a complicated problem.

Defective tax distribution policy

At present there are provisions regarding the Tax distribution system of the Central Government which are flexible and provide more tax revenue whereas the provisions of taxes given to the States are those which are non-flexible and provide for less tax revenue. This arrangement has been made with the intention of providing more revenue to the Centre. The Centre must have more financial resources so that it remains powerful to provide sufficient quantity of financial resources to the states, whereby the State governments can also meet their increasing economic responsibilities, but to what limit and upto what extent so that the State government can fulfil the needs of economic development of their region and remove economic backwardness, and discharge their responsibility to the States and the

Centre remaining strong economically to fulfil the national responsibilities.

For the solution of this problem it is necessary to make amendment in the constitutional provisions of the centre-state financial relations and some portions of the income-tax and excise-duty should be transferred to the States, so that the State government by getting more tax revenue, can perform economic development of their region independently. This transfer of taxes is to be done to such a limit that it does not affect economic provision and prestige of the Central government adversely.

Lesser share of States

The Central Government is distributing 85 per cent of the revenue received from income tax among the States. Out of this 85 per cent amount, 90 per cent is distributed on the basis of population and 10 per cent on the basis of tax collection of the States. Here the problem is—the basis of distribution of tax should not only be based upon the population but some other factors should also be taken into consideration. Among these factors the economic backwardness of the state, per capita income, the number of people living below poverty line, etc., can be included. To achieve the targets of establishing socialistic society the economic disparity of the states has to be removed.

The Central Excise duty as explained in Article 272 of the Constitution, the Centre is not bound to distribute it among the states. But on the recommendations of various Finance Commissions, the Central Government has been distributing a share of this tax to the States The Seventh Finance Commission has recommended to distribute 40 per cent (of the total receipts) among the states Here is the problem that on one hand the production of goods is increasing due to rapid economic development and because of this the receipts are also increasing. So, first of all like the income tax, a share from this tax should also be paid compulsorily to the States and this share must be increased at least by 10 per cent for the solution of this problem.

Need for enhancings it

Keeping in view the increasing financial responsibility of the States, the Central Government must increase the present share of 85 per cent amount to 90 per cent and the total receipts of revenue from excise duty should be increased from 40 per cent to 50 per cent. In this way from the increased amount of income tax and excise duty 90 per cent of the amount should be distributed to the States on the basis of population and the balance 10 per cent amount on the basis of economic backwardness, per capita income and the number of people living below the poverty line in the State and not on the basis of tax collection.

Why surcharges on tax

Article 271 of the Constitution confers right on Parliament to impose surcharge on the items explained under article 269 and 270. By using this power the Centre has, after 1957, imposed additional excise duty in place of sales-tax of the States on some items. On this additional tax the states have shown displeasure from time to time. In the opinion of the States :

The Central Government has prescribed the rates of additional excise duty increasing the rates at a low pace, whereas the Central Government is increasing the rates of excise duty continuously, e.g., on garments, sugar, tobacco during the period of 10 years from 1958 on the one hand the excise duty by 70 per cent on the other hand ; the additional excise duty on these items has been increased 45 per cent only. The States demand that the Central Government should, by removing additional tax, transfer the rights of sales tax to the States. On the subject the 5th and 6th Finance Commissions have also recommended that the Centre should retransfer the sales tax to the states by removing additional taxes The solution of this problem is that the additional taxes should be lifted .

The Centre imposed this additional tax during unfavourable circumstances to fulfil the budget deficit. Normally these additional duties should have been lifted after fulfilling the budget deficit but the Centre has made it a channel of permanent receipt of revenue. It is not proper because ultimately the burden of tax falls on the consumers. By reducing the quantum of additional tax, the Centre should include it on the basic tax itself, if it is not capable of abolishing the same. But the Centre is continuously increasing the taxes. If the Centre reduces most of its wasteful administrative expenditure, the additional taxes can be reduced to a great extent. The budget deficit on account of this reduction or abolition of taxes can be replenished by reducing the administrative expenditure of the Centre and by recovery of the full quantum of basic taxes honestly.

Merge corporate tax into income tax

The Centre levies corporate tax on the income of Indian or foreign companies under direct taxes. The revenue received from corporate tax is increasing continuously. In the budget for the year 1982-83 the amount of income received from corporate tax was Rs. 2,382 crore whereas revenue received from income tax was Rs. 1,574 crore only. From time to time, the States have been demanding that the corporate tax should be included in the income tax. According to law it is also completely justified, so that the share of the states can be increased. For economic development of the country new companies have been established resulting in the increase of their number ; hence gradual increase in income to be received from them.

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In such a situation this demand of the states appears to be proper. For the solution of this problem, Corporate tax be included in the income tax revenue. Because, on the one hand, the number of companies is increasing and the tax on this account is also going up, on the other hand, the economic development of the States is resulting in expansion in the other fields of socio-economic matters. In such a situation, to enable the States to perform economic developmental works independently it is necessary to include the corporate tax in income tax revenue and to distribute it to the State. The Centre is distributing it to the States in other form by imposing some restrictions and conditions over the States. This should be abolished.

Increase grants to States

As per Article 275 of the Constitution, the Central Government gives grants to the States to perform their economic developmental works. This grant is given : to meet the requirements of the budget of the States; to increase the level of social welfare, to meet any special responsibility of national importance before the States, on viewing the comparative financial position of the States as to how much amount is incurred by a State over the credit on looking into the financial necessity of the States; to run the industries of the States, to arrange dearness allowances; to give assistance for rural electrification; to provide assistance for natural calamities, flood; to get relief work in the situation of droughts etc., and to fulfil other responsibilities. To fulfil all the jobs by the States, the grant given by the Centre is always inadequate. The different political parties of the States from the Centre have also to face many difficulties in getting grant from the Centre.

Firstly, in giving grants the policies of the Central Government are kept in view, as also the basis to complete the planning of the States, for some special intentions to eradicate the economic backwardness of the States, including that of the scheduled tribes and scheduled castes, the policy of giving grants keeping in view the number of persons living below the poverty line should also be included. In addition to this, the amount should be increased keeping in view the number of unemployed persons, flood in the state, earthquake, destruction due to drought, etc. This should be increased to the extent so that there should be no necessity of taking loans by the States. The political nepotism can be eradicated by establishing newly framed autonomous organisation.

Growing loan burden of States

As per Article 293(2) of the Constitution the Central Government can give loans to the States against guarantee for the loans taken by them. This loan (amount) is given from the consolidated fund of India. If any state government has already taken loans and desires to take further loan, permission of the Centre is essential. The Centre can impose certain conditions while granting permission also. The State Government requires loan when the total income is comparatively less than its expenditure. The Centre also fixes time for repayment of the principal in addition to the interest charges. The loans granted by the Centre to the States have been increased by 66 times from 1950 till now, so that the burden of loan on the States has been increasing. For the solution of this problem it is necessary to reduce the burden of loan of the States. Till the year ending 1983-84 the amount of loans on the State governments was Rs. 3512 crore. The reason for increase in loan of the States is that the expenditure on developmental activities is more than the total income. The necessity of loan to the State governments arises at the time when they get less amount than it is required to fulfil the rising responsibilities by the States (i) from the tax revenue and (ii) grant-in-aid from the Centre Firstly, the Centre should provide sufficient finance to the States in the form of tax revenue and grant-in-aid so that the States need not have to take loan. Secondly, it is improper to recover interest from the States by the Centre, because the finance received by way of loans from the Centre is utilised in the form of public expenditure by the States. The increasing loans on the States must be dropped or reduced. As stated by the VII Finance Commission also, that the Centre has agreed to this that it does not expect to recover the remaining loan for the year 1979 from the States. The Commission has also recommended a loan relief of Rs. 2156 crore upto the year ending 1984 to the States. The Centre must drop or reduce the loans to the States and to replenish this deficit. Seventy five per cent part of this loan will be of the earlier period and 25 per cent part of the latter period To fill the deficit the Centre must increase import duty (only for luxury items); and wealth tax, gift tax, property tax, hotel tax, interest tax, donation tax, bonus tax, etc., should also be further increased.

Impose expenditure tax

Expenditure tax must be started and recovery of the same may be done strictly and honestly The Centre and the State Governments may earn more income by running the public sector industries and institutions on the commercial basis. To recover the black money and evasion of tax, the Centre must, if necessary, take the help of the military force and start drastic programme on a wide scale. In addition to this the Centre must take in possession movable or immovable property of more than 1 crore rupees situated in the country and abroad of the former rulers or kings of India because such properties were earned and built through the taxes received from the public It means the properties were not built out of their personal income. The Central Government can receive sufficient finance by selling these properties in the country and abroad because these exist in the

form of unproductive capital. Possibly the Centre and the States can recompense their uptodate financial or budgetary losses by transferring this unproductive capital into productive capital. To arrange additional resources, the States must increase the sales tax on luxury items, increase in entertainment tax, increase in excise duty. Thus by reducing or dropping the taxes on the States and to fulfil the requirements of the States in future sufficient tax revenue and grant in aid may be provided in the form of funds. If the Centre found itself unable to apply the aforesaid measures on account of political reasons and vested interests, this work can be given to newly framed autonomous organisation with full powers.

In Articles 280-281 of the Constitution there is a description of powers of the President in constituting the Finance Commission and the functions to be entrusted to it. The President himself is influenced by the politicians or politics of the Ruling Party and, as the President appoints the Chairman and the members of the Finance Commission, there is a vital role of the ruling party in framing of the Finance Commission and the appointment of its members. In such a situation the recommendations of the Finance Commission are also influenced by the ruling party and this creates a problem in Centre-State financial relations. For the solution of this problem there is need for reconstruction of Finance and Planning Commissions.

Create an autonomous institution

In a democratic country like India, there may be government of more than one political party. There may be coalition government at the Centre or State. In such a situation, the functioning of the Government may be influenced due to political jealousy or vindictiveness. The distinct example of this is India itself. However, for the sake of national interest it is essential that development works of nation must be performed impartially, for which there is a need for an impartial institutions to see that developmental works do not suffer for want of economic or financial aids. The present system of five yearly appointments of Planning Commission and the Finance Commission must be replaced by a permanent autonomous institution with full powers and autonomy. The present Finance Commission, the Planning Commission and the Indian Tax Council may be merged with this institution or these institutions should work as subsidiary departments with the newly constituted institution. To enable the newly constituted institution to perform its functions independently and smoothly, the finance department, the planning department, the economic and statistics department and tax departments of the states should be brought under the direct control of this autonomous institution. The Chairman and the specialists for the said institution must be appointed by the President of India on the basis of seniority-cum-merit from the Indian Economic Service, Indian Engineering Service and the fellows of the Institute of Chartered Accountants of India, or from the reputed specialists of the subject. In addition to this, appointments to all important posts of the institution must be made from the candidates of the Indian Economic Service in place of the Indian Administrative Service or the State Public Services. Besides, the subordinate departments, under the control of the said institution, employees from top to bottom must be degree or certificate holders in the subjects of Economics or in Commerce.

For making all these changes there is no necessity of creating new departments or making fresh appointments. The present Economic or Finance Departments at the Centre and the States should hand over their works after conciliaton and employees specialising in economics or finance works should be transferred from the Departments coming under the aforesaid institution. Thus the works relating to finance or economy of the country, viz. formulation of the policies, taking of decisions relating to these works can be transferred with the essential powers to the newly formed autonomous body.

What be its role?

For the evaluation of financial relations between the Centre and the States for the distribution of the tax revenue, for the grant-in-aid, for the formulation of Five Year Plans or one year plan, this institution should organise conference every three years or five years. Among those invited to this Conference should be Ministers of the relevant departments of the Central Government including the Prime Minister and the relevant Ministers of the States including the Chief Minister, and the relevant Professors of the subjects of economic administration and financial management of economics and of commerce subjects from all the universities of India and the reputed economists, financial specialists, technical experts of the country.

To prepare Five Year Plans

By means of these conferences the aforesaid institution can start the formulation of the Five Year Plans or distribution of tax revenue, grant-in-aid and allied subjects after receiving suggestions related to the subjects from all the ministers or the specialists participating in the conference to perform the work on the basis of these suggestions the institution could evaluate the work performed.

To evaluate development work

By taking help of its subsidiary departments and relevant departments of the State Governments this institution can perform all these works and evaluate them independently. By doing so the administrative expenditure of the Centre and the States will be reduced and relations between the Centre and the States could be maintained more cordially even

when there are governments of different political parties in the Centre and the States. Hence this institution can discharge its functions independently in the national interest.

Appoint an Economic Council

For continuous study of each point of economic arrangement of the States, the Economic Council duly recognised by the States should be constituted This work of study of economic arrangements of the States can be done by the department of Economic Administration and Financial Managements, the Economics Departments or the Commerce Departments of the Universities also alongwith the Departments of Finance Planning and Tax, or the Departments of Economics and Statistics of the States. In Centre, this work can be done by the relevant Departments of the Central Universities. The management of this Economic Council must be by the Economists. This council must send its Annual Report of Economic arrangements of the Centre or the States to the newly formed autonomous institution. The study report of the persons related to policy making may be submitted to the said institution through the medium of the Economic Council.

The office of this Economic Council also be located under the roof of the said institute In constituting this Economic Council, there will not be any additional burden on the States or the Centre because all the works to be performed are given to those departments or persons already working there. Besides the study of economic arrangement, the council should also do the work of giving suggestions and make amendments after studying the economic and financial policies of the Centre and the States.

Decentralise powers

For better relations and proper utilisation of the limited resources between the Centre and the States it is essential that the States are given more financial powers by the Centre so that they may not wait for orders from Union Government to fulfil their duties and responsibilities towards the people of their respective States In the present condition when the Centre is well armed with all the financial and administrative powers, the States are practically left helpless to help their people in mitigating their sufferings and in curing their economic ailments in rooting out their poverty.

Also decision-making process

The decisions by the Centre in matters of national importance like economic or financial matters are not at present challengeable but the Centre must give sufficient powers to the States in matters which are directly related to the financial position of the States because only the States can take correct decisions on the matters related to them Interference of the Centre or the Central Organisations in these matters is not justified in any way.

Simplify excise laws

Central Government should amend the Excise Duty Act to suit the changed economic conditions of the present day. The Excise Duty should be levied only once on the last point and more items should be brought into its fold. The duty imposed should not be very high to ensure that production does not suffer and the prices do not rise.

Reshape allocation policy

The present distribution policy of resources between the Centre and the States were made about 35 years ago in line with the economic, political and social situations prevailing at that time, when it was indispensable to do so for making the Centre strong economically and politically. But now India has developed much in all respects and present circumstances are very different from those of the past. In view of this, the distribution policy of the financial institutions should be re-shaped so that the relations between centre and state are established more smoothly.

Lastly, to establish good relations between the Centre and the States the present constitutional provisions should be amended and all the financial matters like plan formulation, distribution of taxes, etc., may be transferred to an autonomous organisation After that even if the Centre and the States are run by different political parties, the politics will not influence the financial relations between the Centre and the States. □

Improvement of national highways in Seventh Plan

An outlay of Rs. 1,019.75 crore has been earmarked for roads in the Central Sector during the Seventh Five Year Plan. Of this, an amount of Rs. 260 crore has been provided for carry over works of national highways, Rs. 626.75 crore for new works on existing national highways and Rs. 5 crore for works on new national highways.

For other schemes under the Central Sector road outlay, Rs. 50 crore has been provided for roads of inter-state and economic importance, Rs. 30 crore for roads in sensitive border areas, Rs. 18 crore for strategic roads, Rs. 14 crore for tribal areas roads, Rs. 7 crore for machinery, Rs. 2 crore for highway training, and Rs. 7 crore for road research and planning studies.

Does long-term fiscal policy lack national perspective?

M. R. Kulkarni & Sateesh Kulkarni

The long-term fiscal policy, feel the authors, is not a national fiscal policy, as it has left out State and local bodies budgets. They say that magnanimity of the State Budgets is so immense that their impact on the economy cannot be minimised. They lament that the policy has not been set in a national perspective of growth and does not seem to share the perceptions of the Seventh Plan whose cause it professes to serve. Nor does it indicate any long-term expenditure policy as advocated by the Planning Commission.

THE LONG-TERM FISCAL POLICY (LFP) announced by the Government has not come a day too soon. The need for formulating fiscal policy co-terminous with the Five Year Plan was in fact mooted by the Planning Commission in the First Five Year Plan itself. For, after all, the objective of any fiscal policy in a regime of planned development must be to subserve the purpose of the Plan In fact, the entire economic policy of the State must be so formulated as to underwrite the strategy and goals of the national Plan. The budget is the most potent instrument of economic policy which comprises, besides fiscal policy, the monetary and credit policy, trade and industrial policy and price policy. For the essence of planning is mobilisation of resources on the requisite scale and their allocation according to Plan priorities while ensuring reasonable equality of sacrifice among the different sections of people.

Part of the package

The role and objectives of the fiscal policy must therefore be seen in relation to planning as a part of the package of policy instruments to ensure the most effective implementation of the Plan. As stated in the First Five Year Plan, with the continuous expansion in government functions and the consequent increase in public expenditure, fiscal policy has even greater significance for influencing the volume and directions of economic activity. In 1951, in the U.K. for instance, government's total expenditure amounted to about 40 per cent of aggregate national expenditure. In the U.S.A. and Canada, it was about 25 per cent and in Australia about 30 per cent. In India the corresponding figure was just about 7 or 8 per cent. As a result of sustained planned effort, government expenditure during the last 35 years in India has increased enormously, making fiscal policy an increasingly powerful instrument of State intervention in the economic activities of the country. According to the LFP, the total revenue receipts of the Central Government alone constituted 9.4 per cent of GDP during 1971-76. This ratio went up to 10.6 per cent during 1976-80 and was slightly lower at 10.5 per cent during the Sixth Plan. However, in 1984-85 it was higher at 11.2 per cent. Correspondingly there was "massive increase" in the size of the Central Plan from about 4 per cent in the first half of the 1970s to 8 per cent by the end of the Sixth Plan If we consider the expenditure of the Central Government, the proportion would be still higher. And if we add the expenditure of the State governments, total government expenditure in the country

(Centre and states) as a proportion of GDP would be considerably higher. As stated in the Seventh Plan, the size of the public economy, measured in terms of revenue expenditure of the Centre and states, has gone up from 10.9 per cent of GDP in 1960-61 to 15.7 per cent in 1975-76 and 19.9 in 1984-85.

As a process of fiscal reforms

It is somewhat surprising that in spite of the above perception shown by the planners in the very beginning of the planning era, there was little follow up through successive Five Year Plans towards tuning the fiscal policy to the Plan. It was only in the budget for 1985-86 that the Finance Minister "committed" himself to moving towards a long term fiscal policy co-terminous with the Plan. Explaining the rationale of this new approach, the Finance Minister stated that, while the formulation of a budget was an annual exercise, it had to be set in a longer time frame to be meaningful. He did not explain why no need was felt for this before. Probably the explanation lies in his observation that the fiscal system as it operated so far had served the country well. But, in his view, because the objective conditions had changed over the years, new responses were called for. And since all reforms cannot be ushered in at one go, LFP was conceived to initiate a process of reform which can be completed in a phased manner in a time bound frame. Hence the formulation of a long term fiscal policy at this stage of our development. While it is difficult to buy the smug protestation that the fiscal policy as it operated from year to year in the past has served us well and it is only now that the objective conditions have changed necessitating a long term policy, we must welcome even this delayed awakening.

LFP reiterates the objectives and goals of socio-economic development of our plans and defines the role of fiscal policy in their framework. The alleviation of poverty, reduction of unemployment, faster growth, modernisation and self reliance are the Plan objectives. The major contribution of fiscal policy to poverty alleviation has to come through an effective programme for mobilisation of additional resources which can be used for financing anti-poverty programmes. Another important way in which fiscal policy can contribute to the reduction of poverty is to encourage rapid economic growth and fast expansion of productive employment opportunities. Taxation has significant effects on savings and investment in the economy, on the allocation of resources between alternative sectors of economy and on the efficiency with which the resources are utilised. In view of the narrow tax base at our stage of development, the fiscal policy must not only ensure that the burden is equitably spread, but also that the taxes are fully collected and evasion is strictly regulated. The long term fiscal policy will ensure that the private sector can formulate its investment with a greater degree of certainty. The fiscal policy must also ensure that financing of the Plan is non-inflationary. In view of the limited scope for further taxation and borrowing (as assumed in the LFP) there would be increasing reliance on surpluses generated by the budget and the public sector undertakings.

Cut non-plan expenditure

In this context it would be appropriate to note the expectations of the planners from the fiscal policy as reflected in the Seventh Plan and see if LFP comes upto those expectations. The Seventh Plan, reviewing the fiscal trends in recent years, observes with concern that government savings have become negative and the entire investment in the public sector has to be financed by borrowings. Central government's outlay on defence, interest payments and subsidies are going up fairly fast. Moreover the government has not only to find funds for investment by many of the public enterprises but also underwrite their losses. Non-Plan expenditure has been increasing faster than revenues resulting in growing deficits. This has caused inflation. Government revenues have suffered as they are not as responsive to inflation as expenditure.

In this background the Seventh Plan lays down the following ingredients of a long term strategy :

(1) Reform and strengthening of the tax structure and its enforcement, so as to make it buoyant and responsive to growth in income;

(2) Formulation of an adequate expenditure policy;

(3) Maintenance of fiscal discipline for non-inflationary financing, and

(4) Policies for improving efficiency and generation of surpluses by public enterprises.

For widening the tax base and make it more responsive to growth in income, the Planning Commission has suggested that it must extend to all sectors of the economy "Particular attention has to be paid to the unincorporated industrial sector and the agricultural sector." The scope for raising more resources through the Non-tax earnings must be explored. Govt. expenditure on health, education, social welfare, infrastructure like roads and water supply, etc., is increasing. The state will certainly be justified in making the well-to-do beneficiaries to pay a part of it through suitable adjustments in fees, cesses and municipal taxes.

The Seventh Plan has been formulated on the assumption that non-Plan expenditure of the Centre and the States will grow at the same rate as GDP, i.e., 5 per cent per annum. This would involve

strenuous efforts at expenditure control. Non-Plan expenditure will have to be rigorously scrutinised and its cost effectiveness improved. The Plan has advocated the adoption of the principle of zero—base budgeting which requires the expenditure even on on-going activities to be justified. It has also emphasised the need for reviewing the subsidies. Some of the subsidies like the fertiliser subsidy are open ended. This must be ended while making efforts to reduce their burden. A time-bound programme must be drawn to eliminate subsidies to loss making public sector units.

Introduce expenditure policy

In the longer term there is need for formulation of an adequate expenditure policy. Various items of expenditure must be properly categorised so that a strict scheme of priorities is drawn up according to which growth in various items of expenditure is regulated.

The Principal benefits that may be anticipated from LFP are listed as follows :

(1) It will impart a definite direction and coherence to the sequence of the annual budgets.

(2) Successful economic management for our complex economy demands a greater role for rule-based fiscal and financial policies and less reliance on discretionary case by case administration of physical controls. Such an evolution will be greatly assisted by the LFP. The growing maturity and complexity of our economy also calls for a much more integrated approach to economic policy and its management. Effective coordination of different dimensions of economic activity and economic policy—fiscal policy, monetary policy, industrial policy and trade policy will be facilitated by a long term perspective to policy making.

(3) The long term fiscal policy is intended to serve as an effective vehicle for strengthening the operational linkages between the fiscal and financial objectives of the Seventh Plan and the annual budgeting exercises to be conducted during the Plan period. The LFP will serve as a bridge between the five year financial targets of the Plan and the annual objectives by providing an indicative year wise financial framework for fiscal policy.

Not a national fiscal policy !

Having stated the objectives and rationale of LFP, the statement proceeds to analyse the past trends in the Central budget and the framework for the Seventh Five Year Plan. A serious limitation of the LFP is that it is a Central government fiscal policy and not a national fiscal policy. The entire analysis and approach are conducted within the framework of the Central government budget. This can hardly be considered as an integrated approach in tuning the national fiscal policy to the national plan. LFP makes it abundantly clear that in so far as State fiscal jurisdiction is concerned, the policy statement has nothing to contribute. For instance, having appreciated the exclusion of agricultural income as a major shortcoming of the personal income tax base and that taxing agricultural income involves many conceptual and administrative problems, this is what it has to observe :

> "Land revenue and taxation of agriculture income is a State subject under Constitution. The Centre has no intention of seeking any change in this position." It is not clear how the Central govt's fiscal policy alone, however well formulated in a long term perspective, can provide an adequate framework for the national plan and its effective implementation. At least an effort could have been made to work out the implications of not integrating the state budgets into LFP. As for finances of local bodies, they do not even find a mention.

There is no doubt that the Central budget and the related fiscal policy play a predominant role in the national economy. But the sheer magnitude involved in the State government budgets are so large that their impact on the economy cannot be minimised. It is true that there has been a massive increase in the size of the Central Plan from about 4 per cent of GDP in the seventies to 8 per cent by the end of the Sixth Five Year Plan. But so too has been the case with the State plan expenditure. And, as mentioned in beginning, the total state budget expenditure is as large as that of the Centre and its impact on poverty alleviation, employment generation, Twenty Point programmes, etc., which are essentially local level programmes, can only be imagined. And then, the combined impact of the Central and state fiscal operations on the private corporate sector, the decentralised sector and the personal and household decisions on savings and investments is not at all reckoned with !

Financial constraints

But perforce confining ourselves to Central government's budgetary operations we find the severe constraints under which the Seventh Five Year Plan will increasingly come even with the most optimistic assumptions. The budgetary contributions to Plan funds come from the excess of current revenues over government's current expenditure. This has progressively gone down from 1.3 per cent of GDP in the seventies to almost half this level to 0.7 per cent in the Sixth Five Year Plan The prospects for the

Seventh Plan are that there will be no surplus left from the budget for the Plan. As a result, the budgetary contributions to Plan resources will have to come almost exclusively from the surpluses from the public sector. The surpluses of the public sector undertakings have increased from about 1 per cent of GDP to 2.1 per cent in the Sixth Plan. This will have to increase significantly further to 3.6 per cent in the Seventh Plan. As noted by the LFP itself, the buoyancy in the surpluses of the public sector units was mainly on account of the public sector oil companies resulting from sharp increase in indigenous production of crude oil achieved during the Sixth Plan. There is little prospect for similar growth in the Seventh Plan period.

The pinning of all hopes on increasing efficiency in the public undertakings is a serious weakness in the whole approach to mobilisation of resources for the Seventh Plan. Unfortunately, LFP proceeds on the assumption that any efforts at reducing non-Plan expenditure is a lost game. There is no trace of an adequate expenditure policy which, according to the Seventh Plan, should be the very heart of a long term fiscal policy.

Why increase Central outlay?

The fiscal policy for the Seventh Plan period has been formulated on the assumption that the outlay on the Central plan will be raised gradually from about 18 per cent in 1985-86 to about 22 per cent in the final year of the Plan. It is not clear why a linear increase in the annual plan outlays should be assumed unless it is based on proper analysis of requirements for funds for projected growth. If the public sector role is going to be diminished in the industrial field in terms of the new economic policy, the emphasis will have to be on consolidation with limited new starts. It may be, therefore, that at least in this sector the outlay may taper off, though much detailed work will be necessary to assess the realistic requirement of public sector outlays from year to year.

Economise non-plan expenses

The danger of excessive reliance on surpluses of public sector undertakings is obvious. If past experience is any guide, the expectations about significant improvements in their working has no strong basis. It is, therefore, extremely important to give greater thought to economy in non-Plan expenditure. Apart from the possible scope for reduction in food and fertiliser subsidies, it is essential to analyse how and whether these contribute to the anti-poverty programmes. An allied problem is the one created by the increasing foodstocks. They seem to be involving a double loss in as much as they inflate the amount of subsidy and at the same time they add to the cost of transportation, storage, etc. While it may not be directly in the realm of fiscal policy, the proper deployment of foodstocks for poverty removal and employment programmes must be considered apart from their fiscal implications.

Progressive liberalisation of industrial and economic regulations has been an accepted policy of the government. This means that the direct control by the government in the form of industrial licensing, import quotas, etc., will be gradually replaced by fiscal and financial controls. LFP shows clear awareness of the need for reorienting the economic policies to such changes. However, it may be necessary to consider in depth how the fiscal policy can take over this new role, particularly during the trasition period. Another factor to be kept in view is the limitation of the fiscal and other policies in influencing economic activities in the large Indian economy, only a part of which is organised and is amenable to any fiscal intervention. Our tax base is extremely narrow and therefore the government's ability to use fiscal policy as an effective instrument of intervention is severely constrained. It is therefore essential that measures and policies complementary to the fiscal policy must be considered.

Introduce expenditure tax

The fiscal policy also shows awareness of the need for progressively introducing an expenditure tax and some form of value-added tax. The latter is difficult to administer in our situation and the progress in this direction will have to be very gradual. But with regard to the expenditure tax, apart from the difficulties involved, the policy makers themselves seem to have reservations about such a tax. It should be accepted that it is desirable to discourage unproductive and conspicuous expenditure and encourage savings. Obviously the effects of this on government's revenue seems to be uppermost in the mind of the Finance Minister rather than on the impact on the economy as a whole.

The rest of the policy statement is concerned with simplification of procedure of tax administration. This is of course of great significance to tax payers and the govt. and every thing must be done to simplify procedures, reduce delays and minimise harassment to the public.

An important aspect related to policy making which is highlighted by LFP is the generally unsatisfactory state of our knowledge of the economy and the impact of various tax measures on savings, investment, expenditure and general economic activity. It is, therefore, welcome that the government would ask the National Institute of Public Finance and Policy to conduct a comprehensive and independent study of the incidence of indirect taxes and subsidies every three years or so. In fact, there is need for similar studies in a number of other areas. For instance, one point of view is that tax evasion persists irrespective of the level of tax rates. It is claimed on behalf of the Government that significant

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Making our planning process realistic

Dr. N. Ashok Kumar

The author here says that despite formulation and launching of several projects and schemes and enormous investments, about 40 per cent of the country's population still lives below the poverty line. Reasons ?........ mainly improper formulation of plans, their faulty implementation and non-involvement of the masses. These three elements, he feels, are interdependent and have to work in unison.

THE TERM 'PLANNING' is not a new concept today as the genesis of the term can be traced long back in the history of the world. The nomenclature might have not been the same as we adopt today, but the theme was same as is of 'Human Development' or 'Social Prosperity'. Now, as well as in the past, planning is or was considered an instrument to achieve stability at the national level and a vehicle for the overall societal prosperity. For sound economic development, continuous and dynamic efforts are needed with respect of planning for future requirements of the nation. This can be done through sponsoring various development programmes and schemes.

What is planning ?

The concept of planning was defined in many ways based on either differences in interpreting the concept itself or from conceptually different thresholds of analysis. Some considered it as man's attempt to control his future, others considered it as knowledge or systematic and professional approach. The generic term planning means special preparation in advance or to arrange before hand. It is more or less material, intellectual, moral, and political preparation. It is a sequence of activities that are carried out with an objective of producing a result concerning not only immediate demands or needs but even long-term demands or needs of the society.

While planning is a continuous process, plans are time bound with a fixed target for achievement, through the formulation of projects and schemes. As a developing country, India right from Independence, launched numerous projects and development programmes under different plans. Inspite of formulation and launching of projects and schemes, investing enormous amount, about 40 per cent population of the country is still living below the poverty line, experiencing dismal conditions. The reasons are fairly obvious. Improper formulation and implementation of plans is one among the other reasons. Formulation of plans and their implementation are distinct from each other but they are inseparable. Conceptually these two are different but functionally they are closely interwoven. At the time of formulating plans, planners need to consider the values, utility and welfare functions of planning in order to bring a change in the social system. This is because what is today called plan may not be the same tomorrow in view of technological change and developments. National development orientation is one of the essential elements for the success of plans and they tend to be seasam in nature. The plans are to be made with adequate information and no room be left for personal interest in the fixation of priorities. The plans are to be tailored in such a manner that whatever projects are designed must fit in more closely with the resources, needs of client population and the area.

The plans or planning in order to be realistic need to confirm to certain basic elements of the purpose

for instance : (i) the problems of the areas or people; (ii) infrastructure facilities including man power; (iii) clear understanding of the proposed objectives; (iv) a strategy for developing a common understanding between the planners and the implementing agencies; (v) clear cut identification of channels for adequate and effective communication between them; (vi) clear specification of time frames; and (vii) the proposed techniques to be adopted in accordance with the local conditions and needs. This means the planners before formulating the plans, social or economic, need to have a clear understanding of the situation otherwise the plans may be of very little use.

The case of Japan

Preparation of plans either by neglecting the elements cited or diluting them probably is the reason why few countries have not developed as fast as others where meticulous care is afforded. For instance, during the post World War II period Japan has developed most among other countries in the South-East-Asia. Mainly because of proper exercise of planning in terms of formulation as well as implementation. In other countries the planning appears to be directly related to the deficiencies in their systems of planning and implementation. The Japanese experience throws light on the need to perfect the methods of planning which still remains a major question for other countries.

In the absence of human development orientation on the part of planners and implementing authorities, any amount of efforts, both physical and financial, are put in with much less than the anticipated net result. This is why most of our development projects and schemes have failed in achieving the ends.

War on poverty !

The national sponsored programmes like IRDP, ITDP, ICDS and IDSMT are all integrated approaches-integration of different sectors-with various objectives and ends—food, shelter, employment, income, infrastructure facilities, family welfare and development. All these programmes are time bound and action oriented-thus fulfilling the very object of planning. Apart from these integrated programmes, the Union Government also sponsors other social welfare schemes. Though the programmes differ from the point of clientele for whom these are launched the theme of all the schemes remains the same, i.e. correcting a situation, wherein the fruits of development have been availed by better endowed areas and affluent to the preclution of deserving areas and people. In other words, it is rather a war declared on poverty. Although these programmes are launched as a part of our national planning, the question remains: Do these programmes achieve the expected results and improve the quality of life ? One can see blackspots in our programmes and schemes which have been launched, of which a few are completed and others are either withdrawn or under process of completion. Identification of blackspots alone may not solve the problem or correct the situation but ways and means can be found to set-right.

Where plans have failed ?

The answer is two fold : at the formulation stage and at the implementation stage. In the former's case it is the planners and in the latter it is the administrators whose lack of passion for the welfare of the people is the reason for the failure of programmes. Apart from this, people's non-involvement is also the other reason. All the three groups are interdependent, and any break, in their interdependence may narrow down the very concept of planning.

At formulation stage

William Goodman has pointed out that "People acknowledged the existence of basic problems such as poverty and elimination of the same is the national issue".

This means every national issue is every body's responsibility in terms of total societal development. At the time of formulating plans, planners need to have clear cut understanding of the theme and objectives of plans. Further the planners have to conform to certain basic elements for instance : (i) the models of plan are to be indigenous in nature; (ii) the schemes proposed are to be viable with respect to economic potential, availability of raw materials and infrastructure facilities; and (iii) clear-cut understanding of the nature of the schemes. It is further noted that following old policies and techniques by the planners is not uncommon in plan formulation ignoring the new techniques and methods that came into existence in the recent past in view of fast changing environment. Thus there is every need that planners have to be exposed themselves to the developments that have been taking place at the local, regional, national and international levels. To do this, our present curriculum and training need reorientation as both of them are important for the success of the plans and considered to be means of human development. Training has become mechanical in nature and hence there is every need for change in the method of training in accordance with the social change and requirements Further it has become a regular phenomenon that training is being imparted to particular cadres of planners. Training is an instrument which should be provided periodically to all categories who are directly connected with the planning aspect.

There are occassions where the planners feel that their work is only concerned with the formulation of projects and not any drawbacks that follow the implementation. This feeling among the planners has become an excuse for them. This attitude on their part needs to be changed. A common language is essential between the planners and administrators in

order to develop a sound and a continuous communication, co-ordination and understanding between them. Further, participation of implementing agencies in the preparation of plans will ensure a greater cooperation between them. For effective and good progress of the nation the planners with humanist orientation should cooperate with administrators and do not step back in setting right any impediments that have been discovered during the course of implementation of the projects by the administrators. This means a close and harmonious relationship between the planners and administrators is inevitable. Any conflict and non-cooperative attitude between them will hinder the progress that are expected. This is because as rightly pointed out by Neutze that "many planners find the making of plans exciting and intellectually and aesthetically challenging, but find implementation a pedestrian and often disheartening chore. Bureaucrats are impatient with plan making. The planners are to be made updated relating to the new policies evolved at the national level and the development of new methodology and techniques. To do this the Government can take the advantage of various research and training institutions that are functioning in the country in order to make them more dynamic and develop a sense of humanist impulse in them.

At implementation stage

The administration at the local level i.e. block and municipality is the actual implementing agency. Apart from the regular work the local governments are assigned with the task of implementing various national development programmes. With its limited core staff of equally little experience these two levels of local bodies are ascribed the responsibility of implementing programmes, and the overall performance can naturally be poor. Amongst the various reasons, lack of orientation towards the objectives, inadequate knowledge, coupled with deficiencies of experience in the administrators at the local government level in the schemes and programmes launched by the Union Government are the main reasons for non achievement of the anticipated results.

Failure of programmes at implementation stage is two fold : State and Local Government levels. Lack of patronage from the state and local governments tend to be a primary cause for the failure of programmes at the implementation level. Although the developmental programmes are launched at the instance of Union Government, due to administrative bottlenecks at the state and local government levels the performance of the projects is poor. The local bodies perceive the task of implementing the programmes, as a burden dumped on them forcibly without adequate considerations to the element of capability. This is because, the administrators at the local level are not much exposed to the newly sponsored programmes and at times may not even be trained before putting them on the new assignment, especially when the staff are already overburdened with the day-to-day work. The effects of such practice can be seen in the implementation of national programmes like IRDP, ITDP, ICDS scheduled Caste and Backward Caste Development Schemes, where the block development officers are incharge of implementing these programmes. Similarly municipal commissioners are put incharge of implementing the IDSMT and Urban Community Development Projects. Administrators in order to safeguard their own positions at the operating level strive only to achieve the physcial and financial targets with least concern about the very objective of the programmes. Hence, reorientation in the implementation process is essential. In addition to this, from the administrator's point of view, lack of interest also sometimes reduce the effect of programmes, however important these may be at the national level. Reluctance to change in attitude, lack of dynamism and insight, with respect of programmes and schemes are the other reasons for failure of programmes. In the absence of the factors mentioned above the staff simply satisfy their positional requirements. In the words of Swami Ranganathananda they "must feel like having a mission to work for, but should not go to do the job with the attitude of a more jobholder, as at present but as an instrument of national purposes and with a tremendous human impulse". This means 'spirt of service' on the part of those who do the job is the most essential element. In the absence of this, any amount of efforts put in becomes pointless. Thus the philosophy of 'total dedication without a touch of self-interest' has its own place in the modern administrative system.

"A majority of personnel are largely motivated by mere self-interest, without any concern for the wider national interest. That has led today to a situation in which everybody complains against everybody". The observation made by Swami Ranganathananda can be considered appropriate while analysing the failure of Our National Programmes. Administrators irrespective of their positions in the hierarchy need to take note of this and become more dynamic while playing their roles in the given environment.

Reorient local administration

Further, in the fast changing environment, reordering of the administrative set up at the local government level is necessary in view of the new tasks assigned to these local bodies. It is a common fact that the administrators at the local government follow the same traditional administrative procedures in the implementation of programmes which they adopt in their regular work. In order to make them desist from following the conventional old pattern and traditional practices of administration, periodical training programmes have to be organised. But, training shoud not be imparted under compulsion. Training must contain the objective of national development and equip the administrators with a broader perspective in relation to total human development

and in accordance with the changes that are taking place in various sectors-technical, industrial, commercial and trade, agricultural and transportation etc., Before allowing them to take up the new job, they have to be made to understand the objectives of the projects, the method and technology that are involved in the process of implementation. This is one side of the coin. The other side, the administrators adopt regional partisanship and non cooperative attitude with the non-officials while implementing the programmes. This attitude on their part needs to be changed. They have to create confidence among the people. They have to carry the mass along with them. They, as the organs of the government should not satisfy with mere achievement of the targets enforced on them but they are intended to see that the real sufferers are benefited. Then alone we can claim that our plans are successful in the upliftment of millions of poor.

Promote people's participation

Apart from the planners and the administrators, people's participation is the third important factor for the successful implementation of the development programmes. This is because people's cause and their development are the means as well as ends of all the development programmes. It is necessary that people need to think of their own brethern and the overall societal prosperity. They have to desist from their self-interest. To correct the economic imbalance in the society every better off person need to commit to the welfare of millions of the poor. This they cannot do mere by lip sympathy, but they have to see that the fruits of development are diverted to these poverty struck people and areas. This is because in all the development programmes which are under progress in different parts of the country, the better-off people either in collusion with the official machinery or by virtue of their status in the society knock off the major share depriving the real beneficiaries of taking their due share. As long as this continues there would not be any impact of these development programmes on the over all socio-economic conditions of these client population.

Although people's participation in the implementation of development programmes is considered vital, it is rarely achieved. The reason is that the people are not properly informed of the programmes that are being implemented in their areas. To make the people aware of the implementation of the programmes the government has to take steps and responsibility. The government with its extensive mass media, can educate the people pertaining to various projects, its objectives and importance. Only when people understand the importance of the programmes, they would participate in the implementation, otherwise their participation will be limited to token activities. Hence, educating the people with all the practical aspects of the projects is important. Any infarction or political influence and corruption in the administrative and general public circles will definitely lead to failure of the programmes. Misuse or abuse of the benefits of the programmes may be possible in the event of non-exposure of the poor, who are mostly illiterate. Creation of awareness among the public is necessary in order to eliminate the 'ghost beneficiaries'.

Thus, planners for the formulation of plans, administrators for the implementation of the programmes or projects and people's participation for normal distribution of fruits of development among the needy and to generate new ideas for the successful implementation of programmes need to play their respecttive roles with national vision for soietal transformation and total human development and prosperity. □

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buoyancy has been observed in tax revenue as a result of reduction of rates in the 1985-86 budget. However, it is known that tax evasion is widespread and as long as detection is not strict and the likely punishment not deterrent taxes will continue to be evaded.

Another area of relative ignorance is the revenues and expenditure of the local authorities. The Seventh Plan has drawn attention to the perilous state of finances of local authorities and their inability to provide even basic municipal services to the public. The tax system of the local bodies is "poorly structured and poorly enforced". Any fiscal policy that leaves out local finances must be considered inadequate and ineffective. But before the budgetary operations of the local bodies are sought to be integrated into a truly national fiscal policy, much more needs to be known about them. Till these lacunae are removed, LFP will remain a poor instrument of economic policy.

On the whole, LFP leaves out a whole vital area of fiscal operations, viz., State and local authorities' budgets. Even within the limited sphere of Central finances, its approach is more of an accounting and budgetary nature governed by immediate constraints and opportunities. It is not set in a national perspective of growth and its implications for the budget. Its most serious weakness is that it does not seem to share the perceptions of the Seventh Plan whose cause it professes to serve. □

Bridging demand-supply hiatus in our planning

Sayed Afzal Peerzade

The great depression of the 30s led to the emergence of the so called Keynesian economics, considered at that time as panacea for all economic ills. But soon several countries realised that by merely increasing the effective demand the economic ills could not be set right. So the economists and planners had to take resort to supply of goods and services. But according to the author, financing of our plans resulted in demand forces outgrowing supply forces thus adversely affecting our economy. In this article the author explains how the supply side ideals have been incorporated in our planning process to do away with this anomaly.

THE FAR REACHING ECONOMIC CONSEQUENCES of the Great Depression made economists to criticize the governments' inaction in no uncertain terms. This compelled many governments to review their economic policies and programmes so as to suitably remedy the ills of mismanagement. The governments considered themselves more responsible than before for achieving higher growth rates, maintaining a desired tempo of growth and avoiding future economic shocks and set-backs.

The period of 1930s also saw the emergence of Keynesian Economics which attributed many economic ills to the inefficient effective demand. It maintained that suitable changes in rates of growth and employment levels could be brought through the changes in effective demand. The demand in its turn was to be pushed up by following an expansionary fiscal policy which called for increased public spending.

The Keynesian prescription provided the most sought after remedy. It is said that the revival of capitalism, which had lost much of its appeal during the Depression, and the rebirth of the ideas favouring free market mechanism were due mainly to the Keynesian prescription. It met the immediate requirements of the day. However, with the passage of time the complex forces operating in the economies of capitalist countries led to the birth of certain economic problems for which, as the experience suggests, the Kenyesian prescription proved ineffective. It has partly lost its appeal. Its reduced efficacy on one hand and the emergence of economic problems of different sorts, on the other, have necessiated many economies to take refuge in the ideals of supply side economies. The successful experiment of Reaganomics and the revival of U.S. economy have now reposed the lost confidence in supply side ideals.

During 1940s and 1950s many countries got independence from the colonial rules. They announced their arrivals with the launching of bold and ambitious development plans. All these countries had common among them the poverty, economic exploitation, political subjugation, malnutrition, higher mortality rates and higher percentage of illiteracy. At the same time these countries commonly shared the aspiration of higher growth, removing poverty, improving living standards and reducing social and economic inequalities. They thought that it was possible to overcome persistent hunger, preventible diseases and exploitation which were cutting the very roots

of human civilization. At that time the Keynesian economics was on its peak. A large number of newly independent countries modelled their economic programmes on the lines suggested by Keynes and his followers, that is, strengthening the effective demand.

It was maintained that the private individual demand alone would not be sufficient to pull the economy out of the vicious circle of lower production and employment levels. The policy makers and advisers asked governments to generate additional demand by increasing public expenditure. For financing the increased expenditure the deficit financing was resorted to and suitable changes were introduced in the methods of note issue. But, the unfortunate aspect of increased public expenditure was that while the financial targets were fully achieved, and in some cases even surpassed, the physical targets, that is, real increases in the supplies, fell far short of the targets. The gap between targeted growth rates and actual growth rates has led to the birth of an inflationary era disturbing plan estimates. The birth of inflationary era thus, could be attributed mainly to the demand management ideals.

Demands overshadowing supplies

When one starts making a critical note of the plan objectives in India it becomes clear that our planners have followed a judicious combination of demand management and supply side ideals. However, the fact is that the demand management ideals were deliberately allowed to overshadow the supply *side ideals maintaining that structural deficiencies in* India were too strong. But, to go by the stand that supply side ideals were not given any importance would be a clear denial of the facts. This becomes still more clear when one goes through the specific objectives of plans pertaining to the industrialization. It may be worth recalling here that the essence of supply side ideals is allowing the forces of supply to operate in a more efficient manner.

It is now increasingly realized that higher growth rates and industrialization are interrelated. The wide disparities in the national and per capita incomes could be reflected in the disparity in the industrial structures The industrial sector, as against agricultural sector, is characterized by higher marginal returns, higher internal saving and investment. The industrialization leads to higher factor productivity which is considered as a pre-requisite for speedy course of growth. Sensing the importance, our planners have accorded due recognition to industrialization.

Small units dominate

The Britishers made no systematic effort to develop the basic and core sector industries. Still then a few industries such as cotton textiles, sugar, paper and to some extent iron and steel made some progress. This could be attributed to the policy of British Government granting discriminating protection. It should also be noted here that the policy of protection was accompanied by the most favoured nation clause for British goods. The pre-independence industrial structure reflected a lop-sided pattern. There was a predominance of small units engaged in manufacturing. It was estimated that out of a total of 52 lakh establishments, 51 lakh establishments employed less than five persons each, while 1050 establishments employed over 500 persons each.

Further, the pre-independence industries were marked by low capital intensity. This was confined not only to consumer goods but capital goods industries too. In the absence of sufficient capital input the pace of industrialization remained quite low. At the same time, during the British period, one could notice the predominance of consumer goods industries. During the early years of 1950s the ratio of consumer goods to capital goods worked out to be 62 : 38. It was under this background that a systematic course of industrialization was carved out. The plans aimed to correct lopsidedness and develop a basic and core sector so as to lay a sound foundation for further industrialization.

Industrialisation, as catalyst

The first systematic and serious effort in the direction of industrialization began with the launching of First Five Year Plan. The government regarded industrialization 'as a base for growth of the primary sector, as a catalytic agent for the development of infrastructure, as a stimulant to the generation of technologies through R & D effort........and as a growth multiplier'. The First Plan by any standard was a modest plan Further, more importance was given to the agricultural sector so that agriculture could supply food for rapidly increasing population, create internal employment opportunities and ensure regular supply of required raw materials to agro-industries. It was also expected that more public investment in agriculture would generate demand for related machines required for its mechanization. So far as industries were concerned the First Plan aimed to utilize existing plant capacity to the full so as to avoid shortfalls in the real supplies. The First Plan saw the establishment of Sindri Fertilizers Factory, Chittaranjan Locomotive Factory, Indian Telephones, Integral Coach Factory, Cable Factory and Pencilin Factory. It was during the First Plan only that the work began on the planning for major infrastructural inputs and the establishment of many basic industries like steel, drugs, pharmaceuticals, fertilizers and *machine tools, etc.*

When we go through the above mentioned list of industries it becomes clear that during the First Plan the major thrust was on capital goods industries. These capital goods industries were expected to create a favourable base for further industrialization. It also becomes clear that during the First Plan a deliberate

effort was made to correct the pre-plan imbalance between consumer goods and capital goods industries. Such a correction requires huge capital investment and involves a long gestation period. The move of this nature is only to come from the government and not from the private sector.

The Second Plan could be termed as an industrial plan. The total investment in the industrial sector was Rs. 1810 crore, that is, 27 per cent of the total plan investment. The Second Plan aimed at increased production of iron and steel, heavy engineering and machine building, expansion in the plant capacities of producers goods such as cement, aluminium, chemicals, dyestuff, phosphatic fertilizers and essential drugs, modernization of existing industrial plants such as cotton textiles, jute and sugar and the fuller utilization of installed capacities.

Emergence of public sector

The Second Plan witnessed the emergence of public sector which was totally absent in the pre-independence period. The public ownership was limited to revenue administration, post and telegraphs and railways. There were two factors responsible for the absence of public sector, First, the concept of public sector itself emerged during the later half of 1940s. Second, the absence of a nationalist government also came in the way of a well defined, well planned and coherent public sector. An important event during the Second Plan was the passing of Industrial Policy Resolution of 1956. In this context it could be said that the Industrial Policy Resolution envisaged a big expansion of public sector. The public sector was expected to yield an adequate return on investments, capture commanding heights of economy, generate additional employment, promote balanced regional development and help develop small and ancillary industries.

The Second Plan saw the setting up of three major steel plants in the public sector; Rourkela Steel Plant in Orissa, Bhilai Steel Plant in Madhya Pradesh, Durgapur Steel Plant in West Bengal. There was expansion of Hindustan Machine Tools, Sindri Fertilizer Factory, establishment of another fertilizer factory at Nangal, expansion of Hindustan Shipyard and Chittaranjan Locomotive Factory.

Diversification

In true sense of the term, the Second Plan was mainly responsible for the diversification of industries. It succeeded in creating a base for progressive industrialization. The process of transformation of economy gathered greater momentum. A well planned beginning was made in oil exploration, atomic energy and thermal power. There was good progress in the modernization and re-equipment of existing industries. A large number of producers goods such as boilers, milling machines, tractors, motor cycles, pump-sets, electronic goods, etc., were manufactured in large quantities. The index of industrial production rose from 139 in 1955-56 to 194 in 1960-61. From supply side view point the Second Plan succeeded in strengthening the forces of real supplies which are essential for an inflation free growth process.

The first two plans provided a strong stimulant and created a sound base. The Third Plan called for a higher investment to strengthen industry, power, transport and to hasten the process of industrial and technological change. It aimed to make the economy self-sufficient in producers goods industries, such as steel, machine building and the expansion of consumer goods industries on a significant scale. The plan investment in organized industry was Rs. 3000 crore out of which investment in public sector was Rs. 1700 crore.

The Third Plan passed through a number of difficulties. The wars with China and Pakistan and a country wide drought greatly affected our planned development. These created too many problems for a country like ours developing with limited available real resources and with great many hindrances. Still then, it could be said that by the end of Third Plan we had completed a decade of intensive development leading to a self-reliant and self-generating economy. It was only during this decade that a deep foundation was laid to build a super-structure of industry. Some of the industries such as engineering goods, automobiles, cotton textiles, diesel engines, electric transformers, petroleum products, heavy chemicals, cement, etc., progressed well The Third Plan also saw the completion of projects such as HEC for the manufacture of machinery and equipment for steel plants, the MAMC for the production of mining equipments and Bharat Heavy Electricals for power generation and transmission equipments.

The Third Plan was completed under heavy distressing conditions. In many cases targets were not achieved. Lower growth rates were experienced in agriculture, cotton textiles and power generation. Not satisfied with the performance, the process of planning itself was given a holiday. In place of conventional five year plans the annual plans were introduced and there were three such annual plans.

Economy looks up

The economy gradually started picking up from the year 1969. There was increase in the agricultural production. The industrial sector also experienced improvement. Taking stock of the conditions the Fourth Plan aimed at completing investments in relation to which commitments had already been made, increasing existing capacities and building up new industries and bases for new industries.

It could be observed here that the Fourth Plan made an explicit mention of fuller utilization of plant capacities. In fact, the capacity utilisation is a problem not only in case of India but in other developing

countries too. The conventional economic theory maintains that monopolistic firms, where the average and marginal revenue curves fall, operate at a point less than full capacity. This particular stand can be understood where monopolistic firms are interested in higher profits. The stand cannot be extended to India and its public sector enterprises which are operating at a point less than full capacity. There are some other factors, avoidable as well unavoidable and in many cases avoidable, which come in the way of full capacity utilization. In case of developing countries which are highly prone to inflation the under-utilization leads to many problems. Taking a particular note of this aspect of public sector industries, our planners called for fuller capacity utilization. For this it was thought necessary to complete in time the on-going projects and design effectively the future projects.

The Fourth Plan envisaged a total investment of Rs. 5300 crore in industry. It worked out at 23.4 per cent of the total investment. Nearly three fourth of the investment was in basic and core sector. The performance was, however, far from satisfactory leading to a wide gulf between targeted and actual growth rates.

Poor show by public sector

As usual the public sector did not perform well. It failed to generate an investible surplus which was to be used for further industrialization. Many of the public sector units showed continuous losses. Realising the poor performance of public sector, the government decided to expand production in excess of licenced capacities. The government also introduced the concept of joint sector to permit larger industrial houses and foreign companies to enter into the areas of lumpy investment and production. That was a right step in the direction of improving industrial supplies.

The Fifth Five Year Plan aimed at achieving self-sufficiency and ensuring growth with justice. Industrialization was regarded as a means of achieving these goals. The Fifth Plan aimed at the rapid growth of core sector industries, diversification of industries, increased capacity utilization, developing ancillary units and improving the supplies of mass consumption goods.

Less reliance on foreign capital

The Fifth Plan envisaged a total investment of Rs. 13528 crore in industry The target of industrial growth was fixed at 8.1 per cent every year. The actual industrial growth was 2.5 per cent during 1975-76 and 5.7 per cent during 1976-77. Taking stock of the situation the government took a few important decisions to stimulate industrial production; 21 industries were delicensed, 29 selected industries were permitted to utilize their installed capacity without limit and 15 engineering industries allowed the facility of automatic growth of capacity at 5 per cent per annum. Despite these direct actions the average annual industrial growth was of the order of 5.3 per cent during 1974-75 to 1977-78...... much below the target. However, during the Fifth Plan we could notice a major transformation in the industries like alloy and special steel, aluminium, refinery products, electronics, tractors, heavy electric goods, etc. The Fifth Plan also saw the emergence of thousands of small and large units. Our dependence on foreign capital, skill and technology declined.

The Sixth Five Year Plan desired to maintain a higher tempo of industrial growth so as to achieve overall plan objectives of structural diversification, modernization and self-reliance. The Sixth Plan aimed at increasing manufacturing capacities in the public and private sectors with a view to improving the supplies of intermediate and capital goods required for agricultural and industrial growth. The Sixth Plan laid emphasis on the promotion of capital goods industry in general and electronic goods industry in particular. It aimed at a judicious import of contemporary technology and promoting the indigenous know-how. It also called for the identification of backward areas and promoting industrial activities through a planned growth of industrial estates.

The Sixth Plan, in its last two years, experienced a growth rate of 5.5 per cent in G.D.P., some thing very unusual in the history of our planning. This becomes still more significant when examined in the light of heavy odds both at home and abroad. The overall food production is satisfactory. There is marked improvement in the power generation. The production of steel, cement and other basic goods has increased The performance of public sector units has once again disappointed. Some of them continued to be in red.

Importance of supply factors

From the above it becomes clear that while framing plan objectives our planners have rightly, if not explicitly atleast implicitly, recognized the importance of supply forces. They aimed at improving the overall production and productivity through the better performance of existing industrial bases and establishing new bases. The target always was higher industrial production so as to meet the rapidly growing demand for manufactured goods. However, the course of financing development adopted was such that it only helped the demand forces to outpace the supply forces. This was not anticipated by our planners This mistake becomes still more serious in view of the fact that at the time of launching of five year plans our economy was industrially backward and it was not expected to perform any economic miracle in the future.

On the whole it could be said that the supply forces ıve proved too weak to absorb the growing pressure ıming from demand forces. The following factors ıntributed to the poor response of supply forces :

1. In the case of industries such as steel and fertilizers production remained substantially low due to certain operational problems, lack of integrated planning and deficiencies in plant designs.
2. Frequent strikes, unsatisfactory industrial relations and weak team spirit.
3. Fluctuations in agricultural output affecting agro-industries.
4. Widespread and too frequent shortages of power, placing heavy constraint on fuller capacity utilization.
5. The failure of public sector to generate an investible surplus for the use in further industrialization. Many of them are incurring losses and eating up scarce resources.
6. An unimaginative and restrictive licencing policy and bureaucratic delays in the approvals of submitted projects.
7. Unrealistic curbs on private sector and introduction of a good number of controls in the name of socialism, thus, eliminating an important origin of supplies.

One need not be pessimistic about the future of ndustrial production and productivity. Whatever ndia has achieved, particularly on the industrial ront, is really remarkable This would be still more ignificant in view of the fact that the whole developnent exercise had to always pass through heavy odds ınd obstacles. It is generally complained that Japan ılso had to start from a total collapse as its industrial tructure was badly damaged during the Second World Nar. It is further argued that during 1950s and 1960s Japan achieved an explosive growth rate where as India did not perform well. For this the case of Indian industry is cited. It is true that the performance of Indian industry is not upto the mark, but what is forgotten here is the fact that such a comparison between India and Japan does not satisfy any criterion of comparative analysis. Japan had a very sound base, the process that began with Meiji Restoration. During the Second World War its industrial structure was damaged and not the foundation. The case for India is certainly different, for not only it had to construct its industrial structure but it had to lay a deep foundation which was conspicuous by its absence before planning. This has taken, atleast, two long decades of planning. The delay has resulted in lower real supplies and not the total avoidance of growth with justice, so dear to our planners!

Steps to improve productivity

Various steps to achieve higher productivity in different sectors of economy were discussed at a meeting of the re-constituted Council of the National Productivity Council (NPC) in New Delhi recently.

The meeting, presided over by the Union Minister for Industry, Shri N. D. Tewari and President, NPC was attended by representatives of industry, workers, local productivity councils, management experts and senior government officials.

Shri D. V. Kapur, Chairman of the Council and Shri R. S. Gupta, Director-General, NPC also took part in the discussions.

Productivity has been reckoned as a major determinants of economic growth in the Seventh Five Year Plan. Capacity utilisation, replacement and maintenance, energy conservation, cost reduction and quality improvement and proper management of projects have been indentified as thrust areas for enhancement of productivity. The plans drawn by NPC in the context of the stress on productivity include plant maintenance, energy audit, pollution control, computerized productivity data base, productivity in agriculture, decentralised and informal sector and participative management for workers and trade unions. The emphasis on these activities is in addition to 20 per cent average annual growth rate in the training and consultancy services being provided by NPC. The programme of the Council was reviewed at the meeting with a view to chalking-out a strategy for productivity growth.

The Council also reviewed the performance of the seven industry-wise Productivity Boards for major industries namely : power generation, transmission and distribution equipment; cement; industrial machinery; machine tools; automobiles, paper, pulp and allied industries and leather and leather goods. These Boards are required to look at the productivity problems and constraints at the industry level and chalk-out plans for productivity improvement.

The scheme of worker's participation in management as an integral part of the Indian management system also came up for a review at the meeting.

Other matters discussed at the Council meeting included measures for creating a climate for productivity and productivity becoming an integral part of the Indian culture. Measures to be taken at the enterprise level and also for making the managers, supervisors, workers and farmers, productivity conscious also came up for discussions at the meeting. □

Shelter for the growing urban poor

P.R. Ramamurthy

Third world countries are faced with tremendous increase in urban population, mainly because of large migration from rural areas. How to tackle the gigantic problem of providing shelter to the ever increasing urban population in the face of limited area and resources? The author gives some concrete suggestions.

DURING THE LAST TWO DECADES, there has been a tremendous increase in the world population; in a quarter of a century, 1950 to 1975, the world population has been doubled from around 2500 million to nearly 4000 million. It is the developing countries who have borne the brunt of the rise and hence, of the consequences. Statistical analysis indicate that the annual growth rate of the poor in developing countries has been almost three times in contrast to the developed ones. Among the three basic requirements of man, namely, food, clothing and shelter, shelter has been the most neglected aspect as far as availability, standard and affordability are concerned.

The problem

Since the beginning of the industrial age, the demographic trend has been more towards urbanisation. In India, today, the urban population constitutes 23.7 per cent of the total population as against 11 per cent in 1901. In fact, the rate of migration amounts to a mass shift of a population of 4 million annually—a growing and colossal trend. Migration is not the only problem. There is a natural increase in the population of urban areas. All this has resulted in a high demand for low-cost housing units as also an ever widening gap between supply and demand, the demand outstripping the supply. For example, in Bombay, the demand works out to about 60,000 units per year, while the supply from the public and private sectors is 20,000 units per year. The costs are so forbidding that only about 20 per cent of the population can afford to take advantage of such housing units. As a consequence, the pavement dwelling and slum formation are the only possible (though illegal) modes of shelter. It is predicted that by the year 2001, out of 15 million people, 60 per cent will be slum-dwellers.

Earlier, the major policy thrust had been to provide houses to low and middle income groups or special categories of economically weaker sections. The slums, where the urban poor have taken refuse, were then considered undesirable blots on the metropolitan areas, and hence were sought to be cleared. The various slum clearance schemes introduced since then only added to the imbroglio, since in view of the formidable costs of rehabilitation, scarce resources and the rapid growth of slums as also problems of social and economical dislocation, such schemes are highly impractical. A TASK FORCE set up by the Planning Commission reported some facts which could be summarised as follows :

(i) Most of the housing schemes for different income groups are launched by private agencies and meet only a tiny fraction of the country's requirements.

(ii) Even the cheapest house built by public agencies is beyond the means of the economically weaker sections. The actual cost is much higher than what was envisaged, namely, due to delays and lack of effective planning etc.

(iii) **The State Governments' laws are highly restrictive.** Also when a State Government gets some, say external aid, the Centre takes nearly a third of the aid.

(iv) Monitoring of public investment is hardly satisfactory and the basic question of whether it has really benefited the lower income groups, remains unanswered.

(v) There is a lot of overcrowding in the metropolitan areas with the slums sharing the major burden The sanitary and environmental conditions in slum areas are very poor. Slums lack amenities like drinking water, latrines, underground sewerage, approach roads etc. In fact, these are the reasons that make slums blots for a cities.

Owning a house or part of the living facility can ensure regular income to family, even when the bread-winner is not employed A new class of 'sub-letters' have sprung up in urban areas, where the urban poor, who managed to get allotment in the slum clearance Board Housing, sublet such facility for a sizeable turn-over, and continue to live in the slums Individuals who can save money' find that an investment on another house or flat commands more capital return than the nominal interest earned by cash deposited in banks. The middle income groups usually try to add to this form of capital, housing being a status symbol. When the law brings a ceiling to this practice, the families resort to division of families to enable the same family to enjoy ownership of more than a single abode. This has aggravated the already scare situation.

The loop is more extensive. The fixed income earners who are used to investing through loan facilities find that commercial banks and other lending agencies are more willing to extend loan facilities for housing than for any other form of investment. The long and steady demand has a part to play in hiking the price. It is a vicious circle with the economically weaker sections and LIGs left out.

Again, the Urban Land Ceiling and Regulation Act, 1976, though aimed at a good cause of releasing large chunks of land to the common man, has not worked at all because of political usage Anti-social elements under the aegis of powerful contacts can frustrate the desires of many. The majority of the slum dwellers, earning good incomes and of good character, can not prevail over these elements. Hence, any change is opposed with vehemence.

How to tackle it ?

First of all, we should have a firm policy of land management, both urban or rural. At present the policy decisions are ad hoc, and vary from plan to plan. Even funding has been ad hoc. Rs. 10 million per town for 200 towns, are arbitrarily allotted, **rather than on an estimate of what is actually needed and on priorities.** The land policy of any urban area should aim at developing rural growth centres where person can build his own abode and also has an opportunity for self-employment or wage employment. Another objective could be to mix work place and land for residential purpose. If some basic minimum services like land, legitimacy of use, water, drainage and power were given, the rest can be created and updated by the occupants themselves. This can ameliorate the problem of environmental conditions.

A study made by the TASK FORCE, set up by the Planning Commission, of the successs stores behind various settlement schemes, for example, the Resettlement Colonies Project of Delhi etc. indicate the presence of some critical factors—(i) a careful and realistic preparation of projects and estimates based on at intimate knowledge of the community; (ii) full time involvement of people through urban community development projects, voluntary organisations etc., (iii) encouragement and use of low-cost technology and solution to problem, and (iv) a clear and specific responsibility of various agencies involved.

Group housing on a co-operative basis could help in reducing the costs on account of sharing the walls and the common facilities. The present set-up in this regard appears to be caught in redtape: registration procedures need to be drastically simplified. In metropolitan areas the administration, instead of catering to the individuals could cater to the societies, and the society can be empowered to sign acceptance of layout as also obtain loans for construction and improvements. Again, if the society could be entrusted with some financial interest or authority in the sales, the collective interest of the residents can be served as it may be able to prevent selling out to builders|slumlords and move out to disorganised slum settlements nearby

Presently, the co-operatives are being taxed quite highly (as far as LIGs and EWS are concerned) and this defeats the very purpose. If a tax moratorium could be announced for slum improvement then most slums will try to improve on their own. The co-operative societies could make arrangements for cleanliness and various incentives could be offered for this.

Again people themselves have to be educated about the Government procedures and such procedures need to be streamlined. On a higher plane, the planning of metropolitan cities could be left to autonomous agencies.

There is also need for curbing the rural migration into the cities. As many people feel, 'migrant colonies' or 'reception centres' could be opened in the cities for the new entrants so that the influx is atleast organised and quantifiable.

As for finance, which seems to be highly elusive resource, we have these options :

(i) financial aid from abroad, e.g. the World Bank has sanctioned Rs. 152 crores to Maharashtra for its urban housing schemes. But as has been said before, the rent contro' measures as also State laws in this regard are highly restrictive and need reformation ;

(ii) public donations could be invited ;

(iii) private enterprises should be told to build houses for their employees and the enterprises themselves can be given loans from the Government or a part of the external aid, repayable at nominal interest rates Taxation in this regard could be reduced as an incentive ;

(iv) bank loan can be extended to co-operative housing societies ;

(v) the revolving fund concept could be resorted to as a means of generating adequate capital ; this basically means to revolve the initial working capital so that it yields a handsome return on investment which could be ploughed back along with working capital to secure increasing return in each cycle of investment. Here the fund must obviously be involved in projects that have a short gestation period, as also being remunerative. As an example the DDA (Delhi Development Authority) has implemented this concept in their first Master Plan of Delhi (1961- -81). A starting capital of Rs .12.31 crores was revolved to about Rs. 206 75 crores representing a resource mobilization of Rs. 194 crores (of course, it is another matter that this operation has distributed land in favour of the high income groups.

To sum up

Need for housing for the poor is a common phenomenon in many of the developing countries. The problem is severe in countries like India due to pressure of tremendous increase in the population growth rates. The housing problem could be solved only when the policy makers, public and private agencies, financial institutions and individuals are willing to collaborate and come closer and evolve suitable long terms strategies. As the years ahead are definitely destined to push up the population figures, quick steps are needed on the following :

(i) providing free housing camps to atleast 50 per cent of the homeless population in rural areas who could have shelter ; and thereby reduce the rural to urban migration;

(ii) evolving clear cut land policies to strengthen the existing Urban Land Ceiling Acts;

(iii) development of industrial satellite towns, by the Government of India for the low income labour force ; and

(iv) development of existing slums in an organised fashion with amenities like provision of drinking water and cost effective sanitation systems.

In a recent session of ESCAP, it has been accepted that 1987 is to be observed as an INTERNATIONAL YEAR OF SHELTER for the homeless, and that our country would also be taking positive steps in this direction. The census on housing units could be a helpful measure in formulating plans for human settlements.

In undertaking massive schemes for housing for the poor, aspects of resource mobilisation, resource utilisation and target setting have to be considered. Regional and international cooperation also may be needed in addition to any indigenous efforts in solving the problem systematically and early. Systematic planning and development of housing schemes will usher in many advantages such as the following :

(a) reduction in the rate of migration from rural to urban areas which is increasing considerably year after year ;

(b) balanced development and better human settlements ;

(c) upliftment of the standard of living of the poor and downtrodden ;

(d) achieving an ecological and social balance ; and

(e) development of new growth centres in underdeveloped regions to facilitate reduction in the migratory pressure and to provide self-employment opportunities for the poor.

"Adequate housing is a pre-requisite not only for the survival and welfare of the poor. It is also necessary for a planned development of human settlements, especially in rural areas" □

Road transport gets higher allocations

During the Seventh Plan, a total outlay of Rs. 203.92 crore has been provided for road transport under the Central Sector. Of this, Rs. 100 crore has been allocated for Delhi Transport Corporation during the plan period, Rs. 65 crore for Capital Contribution, Rs. 2 crore for National Institute of Road Haulage, Rs. 20 crore for electric trolley bus project, Rs. 5 crore for Central Road Transport Finance Corporation, Rs. 10 crore for road safety and Rs. 1.92 crore for miscellaneous works relating to transport. □

Sponge Iron Plant in Andhra Pradesh, symbol of self-reliance

A. Ramakrishna Rao

Development in its true sense means not only increased production but also the manner in which it is achieved. Indigenisation of the needed technology and utilisation of the local resources constitute the hallmark of development. Applying this standard the sponge iron plant in Andhra Pradesh has heralded a new era of industrial self-reliance in India.

THE SECOND UNIT OF THE COUNTRY'S irst Sponge Iron Plant at Palwancha, near Kotha-udem in Andhra Pradesh was recently dedicated to he nation by the Union Minister for Steel and Mines Ar. K. C. Pant. The Plant was conceived in 1975 to itilise the locally available iron ore and coal from ie Singareni Coal Mines and set up with assistance om the United Nations Development Programme and he United Nations Industrial Development Organi-ation. The first unit of the plant went into produc-on in the year 1980 and has an annual production apacity of 30,000 tonnes. With that started a new ra of sponge iron in the country. The unique eature of the plant is that it utilises the locally vailable low grade non-coking coal as its raw mate-al. Generally coking coal used in the steel plants or production of iron and steel is not abundantly vailable in our country Hence the use of locally vailable non-coking coal for the sponge iron pro-uction is very important from the point of view of idigenous use of raw material and developing a iitable technology for the country. The UNDP as given more than Rs. 4 crore for the setting up of this plant in the backward area of Khammam Distt. The Government of India has invested seventeen and a half crore rupees.

Amazing success

This plant uses iron ore from the nearby mines of Bayyaram in Khammam Distt. and Veldurthi in the Kurnool Distt. of Andhra Pradesh. The coal is supplied by the Singareni collieries. The Palwancha Sponge Iron Plant has also given an impetus to the industrial development in the backward tribal area of the state. A significant aspect is that this plant had achieved over ninety per cent of its production capacity within the first year of its operation. This resulted in the expansion of the plant and the establishment of a second unit with a capacity of another 30,000 tonnes. The sanction for the second unit was accorded in November, 1982 with a stipulated time schedule of thirty months. This was fulfilled by the plant management by commissioning the plant in March last year. A foreign exchange saving of nearly two crore rupees was effected by utilising indigenous technical know-how and equipment. As in the case of the first unit the second unit is also utilising ninety per cent of its capacity within a few days of its commissioning. Thus for the first time in the country the indigenous effort has scored yet another success in effective import substitution.

New technology needed

Rightly the Union Minister for Steel and Mines Mr. K. C. Pant dedicating the plant to the nation has emphasised the relevance of new technology to the steel industry in the country. He said even after three decades of steel manufacturing experience in our country, we are able to produce only about ten million tonnes of steel per annum. The common method of steel manufacturing by the iron and steel

plants with the blast furnace is not only highly capital intensive but also has long gestation periods, stretching over six to eight years. Further coking coal used for the blast furnaces is presently in short supply and is even being imported, cutting into our foreign exchange reserves. But the huge iron ore and coal reserves of the country can be profitably utilised to meet the country's requirement of steel with meagre investments by adopting new technologies like the sponge iron. Mr. Pant also said that it is necessary to produce steel at a cheaper rate so as to make it available to the farmers, small entrepreneurs and the common man for rapid development. In fact the success of the Palwancha Sponge Iron Plant has proved beyond doubt the techno-economic feasibility of producing high quality sponge iron using local raw material.

The Managing Director of the plant, Mr. Vangala, stated that the plant has submitted proposals for a major energy saving device ; a scheme of generating power from the waste heat of the plant by utilising it for production of hot metal and also to generate four megawatts of power has been finalised. The unit is also planning to convert the sponge iron into high quality pig iron which is not easily available in the country in the required quantity. The Sponge Iron India Limited is also actively striving for the use of waste products of the plant for converting them into value-added items like glazed tiles for the building industry. Thus the dawn of the modern sponge iron indigenous technology, as conceived and successfully utilised by the Palwancha plant in Andhra Pradesh, has opened new vistas of development which can be exploited fully in the coming years. □

Modern Food Industries shows higher turn-over

The turn-over of the Modern Food Industries (India) Ltd. had steadily risen from Rs. 12.70 crore in 1975-76 to Rs. 33 70 crore in 1984-85. The Company has also been consistently making profits and is expanding its activities.

The problem faced by the MFIL in expanding its bread-making capacity is the reservation of the bread industry to the small scale sector. The issue regarding expansion of capacity of the MFIL in bread making in different areas where there is demand has been taken up with the Ministry of Industry. The expansion of the fruit juice bottling plan has been set in motion to meet the increasing demand for Rasika fruit drinks.

Small savings schemes rationalised

The Union Ministry of Finance has announced several measures for rationalisation and liberalisation of provisions of the small savings schemes for the benefit of the depositors or their heirs.

From April 1, 1986 the limit for settlement of claims for all small savings schemes without production of legal proof of succession has been raised to Rs. 20,000 as against the earlier limit of Rs. 5,000.

The full maturity value payable to the legal heir or nominee of a depositor under the Protected Savings Scheme of the Post Office Recurring Deposits will be made available upto a maximum denomination of Rs. 50 in all the eligible accounts. This benefit was earlier available to only one account upto a maximum denomination of Rs. 20.

Premature withdrawal from Post office Time Deposit account will be permitted after six months of opening the account without the depositor having to assign any reason. Till now such a withdrawal was permitted only after one year from the date of the deposit.

In order to expedite premature closuer of C T D. account with balance upto Rs. 10,000, the procedure of field enquiries by the Post Office officials before allowing such a premature closure has been dispensed with.

The sale of National Savings Certificates VI Issue of Rs. 10 denomination will be discontinued from April 1, 1986, National Savings Certificates VI|VII Issue pruchased from April, 1, 1986 can be prematurely encashed only in certain cases and opening of new Recurring Deposit account of Rs. 5 denomination will not be permitted from April 1, 1986.

According to the new rationalisation, depositors of Five Year Recurring Deposit accounts can prematurely close their accounts after a period of one year without having to furnish any reason. No interest will however, be paid on such premature closure.

On the basis of complaints received that some banks were not advancing loans against the securities on National Savings Certificates VI|VII issue, instructions have been issued to the Chairmen and Managing Directors of public sector banks to impress upon their offices|branches to comply with the instructions of the Reserve Bank of India in this regard.

Women welfare in Seventh Plan

Yojana Correspondent

THE SEVENTH PLAN STRATEGY for integrated development of women aims at raising their economic and social status in order to bring them into the mainstream of national development. It is intended to accord due recognition to the role and contribution of women in the various socio-economic, political and cultural activities.

The basic approach seeks to inculcate confidence among women and bring about an awareness of their own potential for development as also of their rights and privileges. The various mass communication media are sought to be utilised extensively in this task.

Anti-dowry measures

Special measures are intended to be initiated for strict enforcement of the Dowry Prohibition Act and also to prevent harassment of and atrocities against women. Voluntary agencies and educational institutions are sought to be involved fully in launching organised campaigns to combat these evils.

Besides, an integrated multi-disciplinary approach is to be adopted covering employment, education, health, nutrition, application of science and technology and other related aspects in areas of interests to women for their gainful employment and utilisation of their potential. In this connection, efforts are to be made to extend facilities for income generating activities and to enable women to participate actively in socio-economic development.

Concerted efforts are to be made to restructure educational programmes and to modify school curricula to eliminate gender bias during the Seventh Plan period. For this, enrolment of girls in elementary, higher secondary and higher education courses, formal and non-formal, are to be given high priority.

Reducing their drudgery

Vigorous efforts will be made to reduce the drudgery of women by evolving scientific and technological devices so that their time thus saved is utilised for developmental activities. For this, training and retraining is to be ensured for many science and technology related programmes. The beneficiary-oriented programmes in the various sectors of development are to be modified suitably or re-oriented to enable the women to avail themselves of the due share of benefits from such programmes.

Collection and analysis of information and relevant data on the development programmes for women will be undertaken in an effective manner.

Promoting their education

Efforts will be made to provide 100 per cent coverage for education of girls upto the age of 14 years. Priority will be given to retain girls in schools. Women will get priority in teachers' training to enhance girls' enrolment and retention in schools. Incentives like uniforms, free text-books and attendance scholarships will be continued for the needy girls in all schools. Non-formal education will be expanded to benefit girls in 6-14 age group.

The educational content of the adult education programme is to be modified to incorporate new value systems in the community regarding the role of women in the family and community in addition to increasing the coverage of literacy.

In the rural areas, Integrated Rural Development Programme (IRDP), National Rural Employment Programme (NREP), Training of Rural Youth for Self Employment (TRYSEM) and other such programmes will have a component, functional literacy for women beneficiaries.

Talented girls all over the country will be encouraged to pursue higher education. For this, it is proposed to expand the "Open Learning Systems" including correspondence courses for women.

To promote technical and vocational education for girls, more and more polytechnique for women are to be set up during the plan period. Programme for vocationalisation of education for girls is to be expanded.

To boost education among the girls belonging to scheduled castes, scheduled tribes and other weaker sections, additional facilities would continue to be provided under the "Development of Backward Classes" sector.

Participation of girls and women in sports will be encouraged to identify sports talent among women and provision made for sports scholarships, coaching and nourishment support for promising girls to raise their standards in sports competitiveness.

Emphasis on health programmes

Under the programme for health of women, the major thrust will be directed towards maternal care and reducing infant mortality rates. The health and family welfare facilities will be made available to all women in the reproductive age group. The health sub-centre coverage for providing health services would be progressively reduced to below 5,000 persons per sub-centre, thus ensuring better medical facilities in rural areas. Efforts will be made to promote health consciousness so that available health infrastructure could be fully utilised. Mass media, voluntary agencies, village health committees, women's organisations and dais will be employed to spread knowledge about simple remedies for common disorders. Women will also be informed about misleading advertisements regarding the use of tonics, health drinks, etc. Low age, nutritional status of girls and its impact on health and weight of babies born, the demographic and socio-cultural implications of present adverse sex-ratio will be disseminated.

More job opportunities

Special attention will be paid to improving existing skills of women and imparting to them new skills under various programmes of agriculture and allied sectors, rural development, industry, village and small scale industries, District Industries Centres (DICs), Khadi and village industries and through effective implementation of the Equal Remuneration Act for creation and promotion of equal employment for women. Programme of science and technology for women will be further strengthened to provide opportunities for gainful employment|self employment to women specially in the rural areas.

Social Welfare

Under social welfare sector efforts will be made to supplement the services available to women under other developmental sectors. In this connection, very close linkages with specialised agencies like ICAR, ICMR, DST, Rural Development, Industry and Education are sought to be forged.

The Central Social Welfare Board will continue to extend grants-in-aid to voluntary organisations to set up a variety of income generating units for women under the socio-economic programme.

Role of Voluntary Agencies

Voluntary agencies involved in women's welfare measures have so far been confined to urban areas. During the Seventh Plan effective steps will be taken to extend their programmes to rural, hilly and backward areas. The voluntary agencies will be utilised in delivering messages on preventive, protective, promotive health and social and nutritive care for women and children. Voluntary agencies, mass media and educational and vocational training institutions will be involved in a big way towards raising health consciousness in terms of personal hygiene and cleanliness, preventive, protective and promotive health care.

Institutional finances

A new scheme of special financial institution, namely Women's Development Corporation are proposed to be set up during the Seventh Plan for promoting employment generating activities by supporting schemes for women's groups and women from poorer sections of society.

These corporations will identify potential areas of employment and assist beneficiaries in project formulation, raising the requisite finances and marketing of their products.

A Women's Development Planning and Monitoring Cell will be set up for collection of data and monitoring of plan programmes. Provision has also been made for a few innovative schemes|projects, which, if found successful, will be replicated.

A proper monitoring mechanism will be developed to ensure optimal utilisation of facilities meant for women under different sectors and to minimise leakages. For this, special cells, bring set up in Ministries| Departments will be strengthened to ensure proper monitoring and coordination of different schemes. Steps will also be taken to strengthen the machinery for monitoring progress of such schemes of states and at district levels. □

Education to be made purposive during Seventh Plan

THE SEVENTH PLAN provides for reorientation of the education system so as to prepare the country to meet the challenges of the 21st century. The main thrust areas would be (i) achievement of universal elementary education; (ii) eradication of illiteracy in the age-group 15-35 years; (iii) vocationalisation and skill-training programmes at different levels of education; (iv) upgradation of standards and modernisation at all stages of education with special emphasis on science and environment and on value orientation; (v) provision of facilities for education of high quality and excellence in every district of the country; and (vi) removal of obsolescence and modernisation of technical education.

The major strategies for achieving these objectives would include effective decentralised planning and organisational reforms, promotion of non-formal and open learning systems, adoption of low cost alternatives and optimum use of resources, forging of beneficial links between industry and development agencies, mobilisation of community resources and societal involvement. □

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Resource-sharing in Seventh Plan

THE FINANCIAL RESOURCES of the Centre are estimated at Rs. 1,29,039 crore during the Seventh Five Year Plan at the 1984-85 prices. Of this amount, Rs. 29,737 crore would be transferred to the States as assistance to the State plans thereby leaving a balance of Rs. 99,302 crore for financing the Seventh Plan outlay of the Centre including the Union Territories.

The Central allocation of Rs. 29,737 crore for State plans will include Rs. 2,459 crore for the development of area plans such as, hill areas Rs. 870 crore, tribal areas Rs. 756 crore, North-Eastern Council Rs. 575 crore, border areas development programme Rs. 200 crore and other programmes Rs. 58 crore. Assistance for externally-aided projects in the States would be Rs. 3,800 crore. Assistance under modified Gadgil formula will be Rs. 23,627 crore. Of this Rs. 7,102 crore has been earmarked for special category States and Rs. 16,525 crore for other States. Aggregate assistance will be Rs. 29,886 crore of which Rs. 149 crore will be substracted as adjustment for advance plan assistance given for relief works. Net Central assistance for state plans, therefore, will be Rs. 29,737 crore. □

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Our economy during 1985-86

NEXT ISSUE

Focus on water management

Emphasis on human resource development in Seventh Plan

THE SEVENTH PLAN LAYS great stress on human resource development and a major component of this is the expansion of the social infrastructure for education, health care, water supply and sanitation. Besides, human resource development also includes measures to improve the participation of vulnerable groups like scheduled castes, scheduled tribes, women and disabled persons in the development process.

The outlays for human resource development in this wider sense has been stepped up from Rs. 14035.26 crore in Sixth Plan (14.4% of total plan outlay) to Rs. 29350.26 crore in the Seventh Plan (16.3% of total Plan outtay) representing an increase of 109.1 per cent. The share of allocation in social services is also the second highest, next only to the Energy Sector. ☐

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Is Union Budget for 1986-87 relief-oriented?

S. Ananta Charlu

The annual budget for 1986-87 has increased the total plan allocations by over 20 per cent despite resource constraints, but has kept the deficit lower than the last year's. As promised in the long-term fiscal policy, there is to be substantial increase of revenue through indirect taxes most of which will be covered under the new scheme of modified value-added tax (MODVAT). Outlays for anti-poverty programme have been raised and so has the allocation for infrastructure sector like coal, power, railways and petroleum. The author here makes an interesting analysis of the budget proposals and feels that by and large most of them have come as a relief to one and all.

THE SECOND BUDGET OF the Finance Minister, Shri Vishwanath Pratap Singh was presented in the Lok Sabha on February 28, 1986 in the midst of a lot of speculation, though not the drama that had traditionally surrounded the Central budgets Despite his efforts towards demystification of the budget process, the question of how he would raise substantial resources for development without causing any adverse political fall-out continued to persist. The strong public reaction to the increase in the prices of many essential commodities at the beginning of February was too fresh in the minds of the people to be easily ignored. The question repeatedly asked by the knowledgeable people was whether he would go in for a heavy dose of taxation or choose a soft option by having a bigger budget deficit. Seen in this context, most of the budget proposals came as a relief to one and all. One was but tempted to come to the conclusion that in a matter of just one year, Shri Singh had sharpened his skills of skating on thin ice and receiving the applause from both the Members and the galleries.

Indirect taxes, main source

The Finance Minister managed to increase the plan allocation by over 20 per cent despite resource constraints and at the same time kept the deficit significantly lower than last year's. Sticking to his promise of not increasing the direct taxes, which he made at the time of announcing the long-term fiscal policy last year, the Finance Minister provided for a nominal increase of 21 crore rupees from this source. But there would be a hefty increase of revenue through indirect taxes yielding a net additional amount of over Rs. 467 crore. Most of this is covered under the new scheme of Modified Value Added Tax and other rationalisations. Where exactly the incidence of these increases would be felt needed careful examination Shri Vishwanath Pratap Singh was, however, not unaware that by whatever name he might collect more revenue, it would pinch somebody's pocket. So, in a lighter vein, he quipped that the MODVAT, the abbreviation for the Modified Value Added Tax, should not be mistaken to be MADVAT.

Improving the poor's lot

The Finance Minister seemed to have become quite sensitive to the criticism levelled against his first budget proposals in some quarters last year that those had benefited the rich more and also smacked of a shift from the socialist policies pursued by the Congress party. At the very opening of his speech, he quoted, almost defensively, what the Prime Minister

had said about the essence of "our concept of socialism". Again at the end of his almost two hour long speech, he asserted that he had increased outlays for major anti-poverty programmes by nearly 65 per cent in keeping with "our socialist goals." Whatever might have motivated the Finance Minister in framing the present budget, the weaker sections and the middle class had much to welcome in the proposals. He also made a pointed reference to the substantial increase in the duties on the colour T.V. sets and air-conditioners, the supposed symbols of affluence.

Excise Concession

Other welcome features of the budget included the liberalisation of the Excise Exemption Scheme for small scale industry, substantial help to domestic production of edible oils and to the indigenous capital goods industry. The measures he announced to help exports and export production were particularly welcome in the context of the fall in the export earnings noticed in the first nine months of 1985-86. Underlining the importance of export growth to pay for our vital imports without getting into a debt trap, Shri Singh announced that the Reserve Bank would soon come out with further liberalisation of pre-shipment credit facilities for exports.

In formulating the budget estimates for 1986-87, the Finance Minister showed considerable courage and foresight. The Seventh Plan Document envisaged an outlay of 20,000 crores for the next year but the annual plan discussions conducted by the Planning Commission with various Ministries revealed that a much higher order of allocations were called for in order to maintain the momentum of investment in the core sector and also to accelerate the implementation of anti-poverty programmes. This challenge of higher resource mobilisation was taken up by the Finance Minister and he decided to allocate 22,300 crore rupees for the current year's plan, though this constituted a massive increase of Rs. 3,800 crores over the estimates of 1985-86. This also means that in first two years of the seventh plan together, the government provided for over forty per cent of the total plan outlay.

States' increased share

Another welcome feature of the budget was the provision of a higher share for the states and union territories. This has been fixed at Rs. 16,752 crore representing an increase of 21 per cent over the last year's outlay. The state governments' share of central taxes would also go up by thirty per cent over that of 1985-86. Thus the Centre's efforts to improve tax collections have benefited the state governments substantially. There is also a steep increase in other forms of transfer of resources to the states. Their share in small savings has registered an increase of fifty per cent and the Centre's plan assistance to them has also increased by 38 per cent. In addition, the Centre has also provided Rs. 722 crore as assistance to the state governments for drought and flood relief. The problem of overdraft by the states has also been solved by providing a medium term loan of Rs. 1,600 crore.

Stress on anti-poverty measures

The annual plan for 1986-87 provides a major thrust in some important sectors. There is a quantum jump in the allocations for poverty alleviation programmes. For instance the outlay for the National Rural Employment Programme has been stepped up from Rs. 230 crore in 1985-86 to Rs. 443 crore this year. This is an increase of 93 per cent and the programme is expected to generate employment of over 300 million mandays. Similarly, the Rural Landless Employment Guarantee programme will generate employment of 264 million mandays during 1986-87 as compared to 209 million mandays in 1985-86. The Integrated Rural Development Programme which mainly benefits the scheduled castes and scheduled tribes will get 428 crores against 283 crores last year. The outlay for housing schemes for these backward communities and the provision for rural water supply also get higher allocations. The Finance Minister announced that some new schemes would be soon introduced for the benefit of rickshaw pullers, cobblers, sweepers, porters and some other urban disadvantaged groups.

The increased outlays on agriculture and allied sectors are mainly directed to the areas which will help in correcting the lop-sided growth in the Green Revolution. The total outlay for this has been steped up to Rs. 2,838 crore from Rs. 2,207 crore last year. This represents an increase of 29 per cent. The Finance Minister pointed out that the total investment in the area of agriculture would be much higher if the allocations made by the state governments were also taken into account.

The allocations for education, sports, youth affairs, health, family welfare, art and culture and broadcasting have also gone up substantially. This is nearly forty per cent more than the 1985-86 allocations.

Infrastructure gets more

Another major area to get substantial increase in allocation is the infrastructure. The Central plan outlay for 1986-87 in sectors like coal, power, railways, petroleum and surface transport show a raise of 48 per cent. A new innovation is being tried to improve the operational efficiency of the telecommunications network. The government has decided to set up a public sector Corporation to manage and operate the telephone services in the cities of Bombay and Delhi. This Corporation will raise funds through the issue of bonds. In the non-plan expenditure, Defence gets the lion's share. Over Rs. 8700

(Contd. on page No. 9)

. . . and realistic too !

Dr. Radha Raman Singh

Despite a few weaknesses, this year's central budget is balanced, pragmatic and development-oriented, says the author. With its major thrust on the development of rural areas and weaker sections the budget, according to him, has a number of incentives and measures for increasing productivity and providing relief to the common man. But, to meet the huge deficit, it hardly suggests measures to generate additional resources. The author has reservations about the proposed abolition of the company sur-tax and feels that the budget does not give a realistic picture of the increasing non-plan expenditure

THE BUDGET, AS RIGHTLY POINTED OUT by the Finance Minister, Mr. V. P. Singh, is not only an exercise in raising revenue or financing outlays but a powerful tool for achieving our socio-economic goals as laid out in the plan. It is also an instrument for sustaining the pace of development through appropriate financial and fiscal policies. It is, therefore, important to assess the 1986-87 budget of the Government of India in the light of the performance achieved by the different sectors as, also the challenges which the country is facing. The present Budget proposals are so wide-ranging that it is difficult to assess their individual merits and demerits in this short article, but the major thrusts may be scrutinised to test them on certain valid issues relating to growth, equity and social justice. This would involve analysis of the budget in terms of plan and non-plan expenditures, priorities accorded to different sectors and sections in respect of plan outlays, its impact on growth, savings, investments and prices.

The yawning deficit

The present Union Budget reflects that it has been formulated keeping in mind the essence of the concept of socialism as advocated by the Prime Minister, Shri Rajiv Gandhi that "Development must be accompanied by equity and social justice—by removal of social barriers that oppress the weak" which is apparent from the Budget proposals which put major thrust on development of the rural areas and the weaker sections of the population (rural or urban), strengthening anti-poverty programmes, promoting growth and productivity, augmenting savings and investment, reducing cost structure and channelising investment in the desired areas. While the Budget, on the one hand, has singled out the more affluent sections for harsher treatment, on the other hand, it envisages relief to the common man, incentives for import substitution and export promotion and concerted attempt to rationalise the tax structure, including the introduction of modified value added tax system (MODVAT) in line with the long-term fiscal policy coterminus with the Seventh Plan. Though the spate of hikes in administered prices, starting with coal and ending with oil, before the budget and an uncovered budget deficit of Rs. 3650 crore may frighten the people, at first sight, the proposed exemption of kerosene from excise and the confident statement of the Finance Minister about the manageable limit of deficit without any inflationary trend based on the pre-Budget Economic Survey reports, seem to be relief-oriented and logical. But this is subject to strict control and disciplined administration of the policies and proposals, otherwise, it may prove to be deceptive for the middle class and other weaker sections of the population.

The pre-Budget Economic Survey has emboldened the Finance Minister to go ahead with greater zeal for enhanced development with measures of equity and social justice particularly to achieve the targets of the Seventh Plan like raising productivity, increasing employment opportunities and creating an environ-

ment "to make India a modern, technological progressive economy with expanding capacity to provide the basic material and cultural requisites of well-being for all people" (Seventh Plan Vol. I). The pre-Budget Economic Survey indicates an estimated growth in GNP in 1985-86 equal to about 5 per cent which is close to the target envisaged in the Seventh Five Year Plan and marks a distinct improvement over the 3.5 per cent growth estimated for 1984-85. As per the Survey, the performance of the agricultural sector has shown an increase of 3 per cent during 1985-86, certainly a better improvement over the previous year in spite of drought in several parts of the country and the growth of industrial production for the financial year as a whole has been close to 7 per cent There was marked improvement in the functioning of the infrastructure sectors which play the key role in accelerating the pace of economic development. The increase in the wholesale price index during 1985-86 was only 3.4 per cent as against 5.4 per cent in 1984-85 In this situation, the budget of 1986-87 has rightly taken a bold step to increase productivity and employment along with measures of poverty alleviation and relief to the common man which seems to be in tune with the concept of socialism and the target achieving strategy of the Seventh Plan.

The deficit cover

The Union Budget for 1986-87 places total expenditure at Rs. 52,862 crore and anticipates total receipts at Rs 48,767 crore at the existing rate of taxation leaving an overall budgetary gap of Rs 4,095 crore. But the budget deficit has been reduced to Rs. 3,650 crore through recourse to the proposed tax measures The Central Plan outlay has been increased to Rs 22,300 crore registering an increase of 20.5 per cent over the previous Budget in order to maintain the momentum of investment in the core public sector and accelerate the implementation of anti-poverty programmes. The states outlay has been fixed at Rs 15,880 crore representing an increase of 21 per cent over the post-Budget and the Plan outlay for Union Territories is Rs. 872 crore as compared to current year's Rs 640 crore which is 36.2 per cent more than the current Budget. The statement of the Finance Minister, that this increase, though not sufficient, is to meet the urgent requirement, particularly of development and anti-poverty programmes, seems to be an honest statement because the achievements of the targets of development with equity and social justice require huge investments in desired fields. The increase in states outlay equal to 21 per cent over the last year clearly indicates the intention of the Central Government to provide more funds to the states which play significant role in sectors like agriculture, rural development, irrigation and social services consisting of education, health, housing, water supply and sanitation and welfare of the scheduled castes, scheduled tribes and the backward classes, etc. This is further strengthened by the fact that the ratio of Central transfers to states will go up by 15.4 per cent over the last year's figures.

Thrust on rural development

The real thrust of the budget is felt on the front of development. The outlay on rural development which includes a number of anti-poverty programmes, has been increased by 64.4 per cent being Rs. 1509 crore as against Rs. 917.75 crore in the last year. This amount forms 30.7 per cent of the total Seventh Plan outlay on rural development, which is apparent from table No 1 below. Other major sectors having more outlay provisions are energy, transport, science and technology and social services which indicate the intentions of the Budget to strengthen development, infrastructure and social justice. The Budget is bold in every respect and it alone covers 23.3 per cent of Seventh Plan outlay in the Central sector. Table No. 1 shows that the sectors like rural development, energy, industry and minerals and transport have exceeded in percentage allocations in comparison to the percentage coverage of the Seventh Plan being 6.76, 33.60, 20.65 and 17.41 per cent in comparison to the total Seventh Plan percentage allocations for them being 5.13, 32.96, 19.42 and 17.23 per cent respectively. These sectors are closely associated with development, modernisation and social justice and thus, the Budget has taken a bold step, in spite of certain constraints, to accelerate the pace of development with social justice which is the objective of planning in India.

Relief for the salaried

As far as the fresh tax proposals in the Budget are concerned, the Finance Minister has given relief to salaried incomes by raising standard deductions from 25 per cent to 30 per cent, maximum being Rs. 10,000 in place of Rs. 6000. This will provide incentive for further savings. There is also a timely measure of help to self-employed persons through allowances for medical expenses. Equally welcome should be the increase in the basic exemption limit for gift tax from Rs. 5000 to Rs. 20,000 and for capital gains tax from Rs. 5000 to 10,000. But the imposition of gift tax at a flat rate of 30 per cent of the value of the taxable gift seems to be inappropriate and somewhat high for low value gifts. The withdrawal of the investment allowance for companies from the next financial year and abolition of surcharge was indicated in the long-term fiscal policy of the Government but the postponement of abolition of the company sur tax will prove disappointing. The imposition of a flat rate of 40 per cent tax on windfall profits from races and lotteries is a welcome measure.

In the field of indirect taxation, the Finance Minister has not proposed a more extensive restruc-

Table 1

Central Sectoral Plan Outlay as envisaged in 1986-87 Union Budget: A Comparative Statement

(Rs. in crores)

Sectors	1985-86 (B.E.)	1985-86 (R.E)	1986-87 (B.E.)	Percentage increase in 1986-87 B.E. over 1985-86 B.E.	1985-90 Seventh Plan allocations
1. Agriculture	917 93	859 24	917 28 (4.02)	(—) 07	4056.71 (4.25)
2. Rural Development	917 75	1234.40	1509 00 (6.76)	64 4	4961.59 (5 13)
3. Irrigation and Food	168.60	138.24	157 50 (0 70)	(—) 1 2	834.93 (0.87
4. Energy	6569.00	6404 82	7481.00 (33 60)	13 9	31492.14 (32 96)
5. Industry & Minerals	4023 04	4913 48	4605 83 (20 65)	14 5	18552.97 (19.42)
6. Transport	2727.60	3239 93	3882 40 (17 41)	42 3	16459 37 (17 23)
7. Communication, Information and Broadcasting	1072 50	1171 13	1225 30 (5 50)	14 3	6365 82 (6 66)
8. Science and Technology	417 45	405 48	494 83 (2 22)	18 5	2303 43 (2 41)
9. Social Services	1646 47	1646 47	1987 49 (8 90)	20 4	10350 90 (10.84)
10. Others	39 66	34 56	39 12 (0 18)	(—) 1 4	216 14 (0 23)
Total	18500 00	20047 85	22299 67	20 5	95534 00

Note: Figures under brackets are percentages of the total
B.E.—Budget Estimates. R.E—Revised Estimates

turing, but he has proposed some relief measures for the common man and harsh, but not beyond the means, for the neo-rich class of the society. Though the precise effect of the plethora of changes in excise duties for specific items will be clear only after some time, an obvious gainer will be the capital goods sectors, the small scale sector and exports through both enhanced duty withdrawals and concessions on the import of machinery for use in key areas. The introduction of 'MODVAT' for some items marks an important breakthrough in avoiding the unscientific imposts at multiple points on single items and preventing the cascading effects of input taxation and making it possible to formulate saner indirect tax structure in the long run. On the customs duties, the revision conforms to the basic objective of not only their rationalisation but also the provision of protection to domestic industry which is facing competition from cheap imports and these measures are consistent with the Government's long-term fiscal policy. The increase in the import duty on machinery from 45 per cent to 55 per cent and a reduction in the duty on components by 5 per cent raise the net effective duty protection for domestic capital goods by 15 percentage points. The result of the efforts to reduce the capital costs of import activities and export industries would be wholly beneficial to the economy without hurting domestic production of capital goods. But the budget has not much encouraging proposal for export promotion despite the experience of merely 2 per cent increase in exports during the Sixth Plan and sluggish growth rate of exports in the current year.

Relief for the common man

The Union Budget has a large number of incentives and measures for increasing productivity and providing relief benefits to the common man. The proposed measure to increase rate of interest on GPF contributions to 12 per cent is a good attempt to encourage and enhance savings. In the field of small-scale sector, the ceiling of investment in plant and machinery has been raised from Rs. 20 lakh to Rs. 35 lakh. The setting up of Small Industries Development Fund in the IDBI is a welcome measure to augment industrial activity in the small scale sector which forms the backbone of our mixed economy. An increase of Rs 1000 crore outlay on 20-Point Programmes and about 65 per cent rise in the outlay on programmes associated with poverty eradication in the rural areas like IRDP, NREP, Rural Landless Employment Guarantee Programme, Housing Scheme for the S.C and S.T., along with Social Security Schemes for the Urban Poor, etc. show good intentions of the Government to change the socio-economic shape of the economy. But their

effectiveness solely depends upon the capacity of implementation of the State Governments and experience of the past shows that these items have been treated as goose to produce golden eggs for the administrators, politicians and the rural elites and their effect on the weaker sections in real terms has been far behind the targets fixed. Therefore, it remains the duty of the state agencies to work as watchdog not to eat the fruit themselves, but to protect and provide it to them for whom it is meant for and only then, the good intentions of the Government would be fructified in their right direction and desired purpose.

Non-plan expenditure

The budget deficit, although placed on high side at Rs. 3650 crore, may not be inflationary if the economy is moved in controlled manner and the current year's rate of inflation of 3.5 per cent despite a huge deficit amount equal to Rs. 4,490 (R.E.) crore shows an encouraging trend. But the matter of concern is associated with under-estimation of the non-plan expenditure in the budget which is projected to go up by only about 6 per cent next year This is not in line with past experiences and will require special and continuing measures of expenditure control.

Fair and bold

Thus, the Union Budget of 1986-87 is a fairly good and bold budget which has tried to maintain the development-oriented thrust along with provisions of necessary relief, benefits and concessions to almost all the sections of the society. The Finance Minister has done the financial management ably without being ruthless and has proved that budget is not merely a balance sheet of revenue and expenditure but it is an instrument to achieve the set objectives of the plan with equity and social justice. In nutshell, apart from a few weaknesses, the budget may be called a balanced, pragmatic and development oriented budget

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(*Contd from page 5*)

crore has been provided for 1986-87 as against Rs. 7862 crore for 1985-86

The relief to the fixed income groups came in some small measure. The standard deduction of income tax is proposed to be raised from 25 per cent to 30 per cent. The ceiling for this has also been raised from Rs. 6,000 to Rs. 10,000. Interest rates of provident funds have been increased to 12 per cent. The excise duty on some items of daily use have been abolished.

Increase tax collection

On the whole, the Finance Minister seemed to be convinced that the basic strategies he had propounded in his first budget last year continued to be correct. He pointed out that despite drought in several parts of the country the food output had gone up to about 150 million tonnes. The growth rate of industrial production which would be around 7 per cent was also an indication of positive response to the changes in industrial policy. The price rise had been under reasonable control. More than all these things, what had convinced him of the correctness of his strategy was the phenomenal increase in the tax collection. The 22 per cent increase in this area is the highest in a decade. Shri Vishwanath Pratap Singh asserted that this was a testimony to the soundness of the government's strategy to increase revenue through a combination of reasonable rates, simpler procedures and strong enforcement of tax laws. "We have raised more from the rich by way of income tax and not less", he added.

Price hike justified

Shri Vishwanath Pratap Singh did not shy away from the sensitive question of raising administered prices. He put it in the context of the basic issue of raising resources for the plan without fueling the fires of inflation. He welcomed the healthy debate in the country on these questions. He said when all other prices were changing some changes in administered prices were necessary and inevitable. But the government has accepted the view that as far as possible there was need to stabilise the prices of critical commodities. He did not, however, lose the argument by dogmatically asserting the correctness of the government's view in the matter. He has kept it open by announcing that the government would present a policy paper on this question in order to clarify the issues involved and initiate an open debate on the appropriate approach. People in general would surely appreciate this flexible posture.

(Courtesy : Spotlight, AIR)

Banks earn higher profits in 1985

The quick estimates of the functioning of the Public Sector Banks for the year 1985 have revealed a substantial improvement over 1984. After making the necessary provisions, the banks expect to declare a profit of about Rs. 110 crore for 1985 compared to Rs. 83 crore in the previous year—hence showing an increase of 32 5 per cent. This improvement is attributable to the various steps taken by the Government, the Reserve Bank of India and the banks themselves during the course of the year to improve the efficiency and productivity of banks. Some of the banks which have achiever very and goods results are —State Bank of India, Canara Bank and Corporation Bank. ☐

How economy performed during 1985-86

I. Gopalakrishnan

The Indian economy did well in 1985-86, says the author. Agricultural production as well as output of manufacturing sector went up, thermal power generation increased, oil refineries looked up and position of foreign exchange reserves was comfortable. Against this, hydel power generation declined, oil production slowed down, imports of crude and POL showed phenomenal rise and coal production dipped. But in view of the ambitious plan for 1986-87, the author feels, the resource position is hazy. So, urgent measures are needed to bridge the yawning resource gap.

THE PRE-BUDGET ECONOMIC SURVEY for 1985-86 was presented to the Lok Sabha on February 25, 1986 by the Finance Minister, Shri Vishwanath Pratap Singh. The survey analyses the performance of the economy for the year. But it has not many surprises. This is largely because there has been an almost continuous debate on the Government's economic and industrial policies all through the year. A new Government came into place after the general elections in December, 1984. The very first Union Budget that was presented in March last year contained several bold innovations, not the least striking of which were the sliding down in the income and wealth-tax rates as also in corporate tax rates and the rationalisation of the excise and customs levies. It then came out with many policy initiatives and reforms in industrial and economic spheres. The Seventh Five Year Plan, which actually began from April last, was finalised and approved by the National Development Council later in the year. In the winter session, the Government announced for the first time a long-term fiscal policy outlining the contours of a stable fiscal e.nment announced for the first time a long-term showed that those at the helm of affairs in the country were determined to strike out in a bold new direction. There were those who welcomed the Government's moves and others who were sceptical. The reduction in the tax rates was criticised by many who prophesied that it would drastically shrink Government revenues, but the tax collections have never shown such buoyancy as they have done this year. Dire predictions were made about a heavy deficit in the revised budget estimates and consequent runaway inflation, but they have not fortunately come true. The Cassandras who forecast a staggering trade gap on account of liberalized imports may derive some negative satisfaction from the current state of affairs with imports outmanoeuvering exports by a wide margin but the final figures may tell a less gloomy tale.

Economy looks up

Coming to the economic survey, broadly it says that the Indian economy had performed well in the year under review. The growth in Gross National Product (GNP) is expected to range between 4.5 and five per cent, keeping close to the overall plan target of an anual five per cent growth rate. The monsoon was erratic last year, but despite that grain production is estimated at 150 million tonnes against 146 million tonnes, an increase of around three per cent. But it may be pointed out that it did not touch the peak of more than 153 million tonnes attained in 1983-84. What the survey has to point out is that there has been an imbalance in agricul-

tural performance, both crop and region-wise. The Eastern Region can considerably do better in improving per acre yield. The crop-wise imbalance has resulted in less than optimum production of sugarcane and oil-seeds. That is why the Government has announced higher prices for both, to persuade farmers to divert more land to their cultivation. But the food stocks have been more than comfortable at 29 million tonnes and the Government's preoccupation has been to draw down the stocks by supplying grain to the most depressed sections of the people at highly subsidised rates.

Infrastructure improves

So far as the infrastructure is concerned it has had some bright patches, especially in the power sector. Thermal power generation increased by 15.5 per cent in April-December period, compared to the previous year although the hydel generation declined by 4.8 per cent owing to the truant monsoon. The survey has rightly stressed the need for improving the plant load factor of the thermal plants and cutting down transmission and distribution losses. The growth in oil production has slowed down from 4.8 per cent to 4.3 per cent, but refinery throughput went up by 22.0 per cent as the indigenous crude is now mostly processed within the country instead of being exported. Imports of crude and POL products also have gone up, causing an adverse tilt in the balance of trade. Coal production dipped, but this is explained as having been necessitated to bring down pithead stocks. The railways carried more revnue-earning traffic than was estimated.

The industrial production has averaged around 6 per cent, according to the latest figures available. However, the survey admits that the full impact of the various innovative measures taken during the year, such as delicensing of a number of items and broad-banding of others, has yet to be felt. But there has been a significant rise in the letters of intent issued, the number of licenses applied for and cleared and a spurt in capital issues which took the stock market by storm.

Better tax collections

Referring to the fiscal and monetary policy, the survey highlights the rise in the Centre's collections from direct taxes in the first ten months of the current fiscal year by some 23 per cent over budget estimates. This is no doubt partly due to better compliance by tax payers as the Finance Minister had hoped for when he had lowered the tax rates. But the Government also had put the fear of God into the minds of those who might have hoped to get away with some evasion on the side. The number of raids carried out by the enforcement agencies to unearth evasion of various kinds of taxes and the amounts seized as alleged unaccounted money have both been a record. In the long term fiscal policy, the Finance Minister has promised not to vary the tax rates for the next five years, although the situation would be reviewed every two or three years to correct any drastic change in the situation.

Paradox of price indices

All the same, the price situation is somewhat tricky. The survey claims that the wholesale price index has gone up only by 3.1 per cent between March 31, 1985 and January 25 this year, compared with 5.7 per cent in 1984-85. The consumer price index for industrial workers, however, has gone up from 7.5 per cent between March and December compared with a rise of 5.4 per cent in the same period in fiscal year 1984-85. This is somewhat of a paradox. The explanation given is that the wholesale price index is the broad measure of inflation in the economy, while the consumer price index reflects the price movements of the items that go into the consumption basket of workers. This explanation may satisfy the economists, but not the common man who knows where the shoe pinches. The survey also refers to the legitimate concern in the country over the changes in administered prices and concedes that when prices of these items are changed there is an immediate impact on household budgets. The ideal policy, therefore, is to avoid these increases as far as possible. But when there is a wage increase or increase in procurement prices or in international prices of imports there is nothing to be gained by postponing an adjustment in the administered prices. The dilemma before the economic policy makers is evidently when and by how much the adjustments in these prices should be made to avoid popular discontent from spilling over.

Trade imbalance

Yet, the darkest spot in the economic scene is the balance of payments situation. Provisional figures show a spurt of 25 per cent in imports in the first six months of 1985-86 over the corresponding period last year. Exports actually declined by 0.7 per cent. However, there is hope, somewhat mutely expressed in the survey, that the year-end figures will be brighter. But obviously the Commerce Ministry will have to do its sums over again to ensure that the trade gap does not widen too much at a time when the overall external environment for aid and trade is somewhat bleak.

Public sector belies hope

Another matter for concern is the continuing slippages in the public sector. Not that these enterprises have not performed better than in 1984-85, but they have belied the expectations which the budget-framers had reposed in them. The survey speaks of improving their performance so that they

(contd. on page 18)

Highlights of annual plan 1986-87

Yojana Correspondent

THE CENTRAL BUDGET FOR 1986-87 seeks to strengthen the public sector, provide a further thrust to the anti-poverty programme, promote self-reliance in economy and provide relief to the common man.

The plan allocation for 1986-87 has been raised to Rs. 22,300 crore against Rs. 18,500 crore during 1985-86 thus marking an increase of 20 5 per cent. This is intended to boost a number of projects in the public enterprises.

States get Rs. 15,880 crore in 1986-87 registering 21 per cent increase over 1985-86 and Union Territories Rs. 872 crores against Rs 640 crore in 1985-86 marking over 35 per cent increase The total transfers to the States on various counts are estimated at Rs. 20,708 crore which is 15.4 per cent higher than the budget estimates for 1985-86.

Core sectors

An outlay of Rs. 10,805 crore has been marked for the core sectors of coal, power, petroleum, railways and surface transport during 1986-87.

The Department of Power has been given Rs. 2,575 crore in 1986-87 against Rs. 2,090 crore in 1985-86 to provide for an additional generation capacity of 4,000 MW, of which 865 MW will be in the Central sector. During 1985-86, the Central thermal power plants were showing a plant load factor of 67.9 per cent against the national average of 51.3 per cent.

The major power projects are Meija thermal station (630 MW) of the Damodar Valley Corporation in Bankura district of West Bengal at a cost of Rs. 566 crore, Kawas (Gujarat), Auraiya (UP) and Anta (Rajasthan).

A power finance corporation is being set up to help finance some power projects. It is being given Rs 70 crore. A sum of Rs. 30 crore is provided for modernisation and renovation of old power plants.

The outlay for atomic energy has been raised from Rs 495 crore in 1985-86 to Rs 550 crore in 1986-87.

The Ministry of Petroleum and Natural Gas has been provided Rs. 3,300 crore with crude oil production planned at 30 2 million tonnes and gas up by 28 per cent.

The Department of Coal receives Rs. 1,350 crore in 1986-87 against Rs 1,102 crore in 1985-86 Coal remains an important primary source of energy with the output target fixed at 166.8 million tonnes.

In the steel sector, Rs 650 crore more has been provided for the Department of Steel This is in addition to Rs 700 crore for Visakhapatnam

Telecommunications receives Rs 915 crore.

Transport sector as a whole gets Rs. 3,875 crore including Rs. 2,650 crore for the railways, Rs 295 crore for air transport leaving Rs. 930 crore for road and water transport including shipping

Science and technology gets Rs 494 83 crore in 1986-87 against Rs. 417 45 crore in 1985-86 and Rs. 405 48 crore in revised estimate Social services get Rs 1,987.49 crore against Rs. 1,646 47 crore in 1985-86 and others Rs 39 12 crore against Rs. 39 66 crore in 1985-86 and Rs 34 56 crore in revised estimates for 1985-86.

Urban development has been allocated Rs. 408 crore in 1986-87 against Rs. 398 crore in 1985-86.

Industry and minerals get Rs. 4,605.83 crore against Rs. 4,023,04 crore in 1985-86.

Poverty alleviation

Under the poverty alleviation programmes, there is a quantum jump of about 65 per cent in the funds for reduction of poverty, going up from Rs. 1,239 crore in 1985-86 to Rs. 1,851 crore in 1986-87. Among the various anti-poverty programmes, the largest rise in allocation comes for the National Rural Employment Programme (NREP), the outlay for which has been increased by 93% from Rs.230 crore in 1985-86 to Rs. 428 crore for 1986-87. The other major anti-poverty programmes are the Integrated Rural Development Programme (IRDP) & the Rural Landless Employment Guarantee Programme (RLEGP). Rural Water Supply has been allocated Rs. 317 crore.

Agriculture and allied sector seeks to tackle the central problem of poverty. The total Central outlay for agriculture department has been stepped up by 29 per cent from Rs. 2,207 crore in 1985-86 to Rs. 2,838 crore in 1986-87. Rural development sector will have Rs. 1,509 crore against Rs. 917.75 crore in 1985-86 and revised outlay of Rs. 1,234.40 crore.

20-Point Programme

The allocations for the 20-Point Programme are up by over Rs. 1,000 crore—from Rs 4,900 crore in 1985-86 in the Central plan to Rs 5,998 crore in 1986-87.

An outlay of Rs. 125 crore has been provided for housing of Scheduled Castes, Scheduled Tribes and bonded labour under a new housing scheme called "Indira Awaas Yojana".

Human resource development

Allocations for human resources development have been raised by over 40 per cent from Rs. 1,236 crore in 1985-86 to Rs. 1,733 crore for 1986-87. The outlays under this sector cover education, sports, youth affairs, health, family welfare, women's welfare, environment, art, culture and broadcasting. In the Seventh Plan, a major thrust has been given to the development of human resources.

The outlay on education is up by 59 per cent from Rs. 221 crore in 1985-86 to Rs. 352 crore in 1986-87. Rs. 7.5 crore has been proved for the National Open University. Rs. 25 crore has been allocated for 'model' schools—50 such schools to be opened in 1986-87 out of proposed one such school in each district during the Seventh Plan.

The zonal cultural centres are proposed to be set up speedily to promote the composite culture of India. For this, Department of Arts and Culture will receive Rs. 59 crore in 1986-87 against Rs. 19 crore in 1985-86 thus marking an increase of over 200 per cent.

The Ganga cleaning up programme is provided Rs. 52 crore for 1986-87 against Rs. 10 crore in 1985-86. Wasteland development gets Rs. 15 crore as work on it appears to slow. Social forestry gets Rs. 20 crore.

Other expenditures

Defence outlay has been stepped up by over 11 per cent, from Rs. 7,862 crore in 1985-86 to Rs. 8,720 crore for 1986-87.

The subsidy on food and fertilizers will remain at the same level as in 1985-86 with a total provision of Rs. 3,700 crore.

The budgetary gap

The new tax proposals during the year 1986-87 are to yield Rs. 488 crore of which the share of states will be Rs. 43 crore and Rs 445 crore to the Centre. This leaves an uncovered deficit of Rs. 3,650 crore, which is lower than in 1985-86. In relation to the size of our economy, the deficit is stated to be reasonable, manageable and non-inflationary.

Other highlights

A new Mutual Fund in the public sector to help small investors is to be set up as a subsidiary of the Unit Trust of India. Investment in the Units of the proposed Mutual Fund will be exempted from capital gains under the Income Tax Act.

Besides, interest rates on provident funds has been increased to 12 per cent. Standard deduction for calculating salary income tax has been raised to 30 per cent from the existing 25 per cent of the total salary subject to a maximum of Rs. 10,000 from the existing Rs. 6,000. The basic exemption limit for gift tax has been raised to Rs 20,000 from the existing Rs. 5,000.

Refined groundnut and mustard oil will cost more; other edible oils are to cost less.

Prices of colour television, airconditioners and cars are to go up.

Small scale industries will be encouraged. The ceiling of investment in plant and machinery is raised to Rs. 35 lakhs from the existing Rs. 20 lakhs. Under a new scheme of excise concessions, 85 per cent of the small scale units will get full exemption relief from excise.

A new scheme of excise taxation called Modified Value Added Tax (MODVAT) has been introduced from March 1, 1986 to enable manufacturers to obtain instant and complete reimbursement of the excise duty on the components and raw-materials. The scheme seeks to cover, among other things,

(Contd. on page 20)

Rural industrialisation for overall growth

V.R.M. Desai

The author here calls for a preferential treatment to the rural sector, as left to itself rural economic forces may not be in a position to remedy many locunae inflicting it. Apart from provision of employment to the local people, rural industry adds to their prosperity, narrows down progressively the disparity between rural and urban incomes and prevents migration of rural people. Maximum productive employment of local resources, revival and development of traditional industries and skills, establishment of new units, integration of agricultural and industrial strategies are the imperatives of rural industrialisation.

IN RECENT ECONOMIC LITERATURE and economic thinking, industrialisation has been considered as a key to rapid economic development. It offers prospects of a growing availability of manufactured goods, increased employment opportunities, improved balance of payments position, and greater efficiency and modernisation throughout the economy. Industrialisation is characterised by technological innovation, the development of managerial and entrepreneurial talent, and improvements in technical skills, which lead to higher productivity. "India lives in its villages". More than 76 per cent of the population live in rural India. Even by 2000 A.D., over 70 per cent of the expected population will continue to live in three lakh seventy five thousand villages. In absolute number, there is likely to be more pressure on land. As at present over fifty per cent of the people in rural areas live-below the poverty line drawn in 1978-79. If upward adjustment is made in view of the rising trend in the cost of living, more than 66 per cent of rural people continue to live below the poverty line. Whereas, the father of our nation, Mahatama Gandhi, cherished that, "the quality of life in the villeges should be the same, if not better than that of urban habitations.....the village people should not only be self-sufficient and self-reliant but also participate in matters of their own development".

What is rural industry ?

A rural industry could be defined as one which is located in a large village|cluster of villages with a population of 10,000 to 50,000. In order that short and long term lending policies of the financial institutions are streamlined, the rural industries investment limits of minimum-maximum amounts on plant and machinery and working capital may be fixed at : (i) Rs. 10,000—15,000 for machinery and as much for working capital for small artisan type of units, (also capped tiny sector some times) and (ii) Rs. 50,000 to 1,00,000 for machinery and as much for working for other rural artisan industries.

How does it benefit ?

1. Rural industries provide additional employment opportunities, raise production and improve economic conditions in rural areas.
2. Rural industries are labour intensive. They provide additional employment to men and women. Ensures decentralisation of economic power and elimination of monopolistic exploitation.
3. Decentralised production through a network of well-knit rural industries obviates the necessity of complicated managerial and

competitive marketing techniques, thus reducing the costs on account of overheads.

4. Rural industrialisation leads to the development of rural areas thereby lessening the disproportionate growth in large cities, reducing the growth of slums, social tensions, exploitation and atmospheric pollution

5. Rural industries strive to build up village republics and human resources development

6. Rural industrialisation provides ample scope for the promotion of artistic achievement and creativity that has been suppressed in rural areas.

Although, agriculture is the main stay of the rural economy, rural industry is a complementary industry. The pressure of population on land is already high and increasing In the process, it has resulted in a large surplus of labour, both educated as well as uneducated in rural areas. Agriculture alone cannot absorb the entire surplus force and hence the need for rural industries. If we consider rural industry as a main stay, agriculture is an important part of this process. Rural industrialisation aims at the maximum productive employment of local resources, revival and development of traditional industries and skills, establishment of new units and integration of agricultural and industrial development in rural areas, so as to provide increasing employment to local people, add to local prosperity, progressively narrow down the dispartities between urban and rural incomes, prevent migration of rural population. More so, rural industrialisation has been assigned a crucial role in the development of industrially backward areas in rural India.

Gandhian view-point

From the Gandhian view-point, "Rural Industrialisation" should not merely amount to industrialisation of rural India. It should, in fact, lead to 'ruralization' of Indian industries wherein production apparatus and technology suitable to Indian ethos and culture and rural needs and aspirations would play a decisive role in generating and sustaining real happiness while ensuring harmony with nature. The following basic inferences are derived from the Gandhian economic approach to rural industrialisation :

*In Gandhian perspective, rural industrialisation is welcome as it promotes decentralisation of industry and it is not city-based

*Gandhiji was not aganist mechanised industries —big or small—provided they subserve the overall interests of the rural people.

*Priorities of production have to be planned and implemented to suit the real needs of the masses.

*Industries should be labour-intensive, generating more employment.

*The village and cottage industries should be encouraged side-by-side.

*Industries should be labour-intensive, generating economy of the region but should promote the quality and well-being of the rural masses.

*Application of new technologies should be appropriate to the regional needs, making use of indigenous resources. Efforts should be made to reduce the disparities in income, with a guarantee of reasonable minimum 'living income'.

Since Independence it has been one of the basic objectives of planning to revive and rejuvenate village and cottage industries through various measures. The revival of such industries was aimed at providing alternative sources of employment to the rural people whose only source of livelihood has been agriculture. The increasing pressure on land made the opening of several avenues of employment an urgent necessity. Rural industrialisation is commonly understood as meaning merely rejuvenation and development of traditional and village industries. To some, it seems merely the introduction of small units of large scale mechanised industries in rural areas. In fact, rural industrialisation signifies much more than these. It means the integration of industry in the life of the people in the rural areas. In this sense it would mean not only the introduction of new technology in the villages but also the optimum utilisation of local raw materials and manpower. If industry is to be integrated into the life of the people in rural areas the type of industry that can be run profitably will vary from areas to area. It should depend on the availability, among other things, of the raw materials, power and technically trained personnel and the possibility of their introduction into the area from outside without generating further imbalances in the already aggravated rural economy. Rural industrialisation has to contend with all these difficulties if it has to become really an effective programme to ameliorate rural poverty.

Through the plans

Development of industries in rural areas has been an important feature of industrial policies and programmes for rural development in India. The important role which rural industries can play in ameliorating the socio-economic conditions of the rural people has received emphasis in most of the major policy pronouncements on development in India. The Industrial Policy Resolution of 1948 emphasised the "utilisation of local resources and the achievement of local self-sufficiency in respect of certain essential consumer goods" as the most suitable characteristics of cottage and small industries. This approach was

followed in the First Five Year Plan But the development of rural industries was conceived largely in isolation of the rest of the economy. The Industrial Policy Resolution of 1956 pointed out rural industrialisation as favourable to creation of employment, equitable distribution of income and mobilisation of capital and skills The Industrial Policy of 1980 emphasised on the industrialisation in the industrially backward areas/rural areas in India The Second Plan (1956-57, 1960-61) looked upon rural industries as an integral component of national economy. In the 26 Pilot Industrial Projects, a special dimension was added to the programme of development of rural and small industry. This approach was followed up in the Third Plan (1961-62, 1965-66) with the formulation of Rural Industries Projects in 49 selected areas to promote village and small industries including ancillary industries. The programme was continued during 1966-69 and the Fourth Five Year Plan (1969-70, 1973-74) when a Backward Area Development Programme was adopted. The Fifth Plan broadened the rural industries programme spatially to cover the entire districts, except the towns, in each project ; and 100 new districts were included in the programme. The Sixth Five Year Plan (1980-85) emphasised need for revitalisation of traditional industries and raising of their productivity by upgradation of skills and techniques. A positive effort was made to disperse these industries over a wider area, particularly in the rural and semi-urban areas

Rural industries in Seventh Plan

The rural industries sector constitutes an important segment of the rural economy in terms of employment, output and exports. The policies and programmes for this sector should emphasise rationalisation of the fiscal and taxation regime, provision of appropriate infrastructure, the introduction of modern management techniques, upgradation of skills of artisans and propagation of appropriate technology and the adoption of a coherent marketing strategy both for internal urban and export marketing The policies should not, on the other hand, be such as would discourage the natural growth in size of tiny rural industries The organisational set-up will have to be revamped to meet the changing higher technological needs in terms of a well-programed human resources development. Adequate and well-organised programmes of extension, training and entrepreneurial motivation will have to be undertaken Research and Development efforts will have to be stepped up and commercial production and distribution of improved tools and equipment undertaken Special programmes should be developed for the tiny sector having investment below Rs. 2 lakh. The financing of dispersed sector will have to be modified in relation to the economic status of the beneficiaries. New initiatives are required for increased production of ancillaries, as adjuncts to parent plants both in the private and the public sector. Effective implementation of all programmes will also require strengthening of the data base and monitoring arrangements.

Industrial development strategy has to be based on adequate infrastructural development, incorporating the growth centre concept and nucleus plant approach together with initiatives for increased ancillarisation. The policy framework must also disperse industry away from urban concentrations. In the north-eastern region, particularly, industrial growth will have to be promoted keeping in view the totality of facilities and incentives and infrastructure that is made available, and not merely in terms of financial concessions like investment and transport subsidies

The credit flow to tiny units, with investment in plant and machinery up to Rs. 2 lakh, which account for 94 per cent of the small scale units and provide 72 per cent of the employment in this sector is disproportionately low Such units have obtained only 48 per cent of the credit flow to the small scale sector and 52 per cent of the credit flow has gone to the larger and well-organised small scale units which comprise only 6 per cent of this sector. It is necessary to rationalise and augment the credit flow to the tiny units.

Processing facilities for upgrading the quality of Khadi and a marketing strategy for diversification of its use will be pursued and organic linkages established between KVIC and the State Level Khadi and Village Industries Boards. Commercial borrowings, where necessary, assisted by differential interest rates subsidised by KVIC, will be increasingly utilised instead of direct KVIC financing. Village industries and handicrafts development will be pursued, through appropriate policies To ensure faster growth of rural industries and handicrafts, the need for establishment of separate commissions will be examined.

The coir industry should direct research and development efforts towards diversification into new products and uses, and the Coir Board will have to be revamped for rapid development of the coir industry.

An expanding role is envisaged for the handloom sector including the production of the entire requirement of Janata cloth However, the handloom sector continues to retreat before the growth of the powerloom sector. The position of the powerloom sector needs to be clearly defined in satisfying the textile demand and given its rapid (and unlicensed) proliferation, it will have to be assigned some specific role co-extensive with the handloom sector, so that both can develop optimally.

Sericulture has been experiencing a slow rate of growth primarily on account of the non-availability of basic seed and insufficient attention to genetic upgradation. Considerable attention should be focused on basic research, propagation of multivoltine hybrids, seed preparation and maintenance. The emphasis on rural industrialisation will continue with bet-

ter planning, closer monitoring and tighter organisation for effective implementation. Backward and forward linkages will be fully provided so that beneficiaries are able to make full use of the assistance.

The strategy of the Seventh Plan will be that the programme and policies have to be oriented to the objective of providing productive employment to everyone seeking it and in every sector.

Why rural industrialisation?

Rural industrialisation is important because it contributes to the development of agriculture and urban industries. Without rural industrialisation it would be considerably more difficult to solve the problem of agricultural unemployment and widespread underemployment. Rural industrialisation promotes agricultural development and agricultural development promotes rural industry. The development of rural industries increases the level of income in rural areas, and tends to break down the old self-sufficiency of the family and to lessen its cohesiveness, creating opportunities for youth, women and the able bodied as well in changing the pattern of leisure and work. Rural industrialisation should be looked upon not merely as a way of containing the rural workers and stopping them from migrating to urban areas by providing them some kind of remunerative employment in the villages, but as a dynamic element in the process of raising the productivity and income levels of the workers in rural areas

Rural industrialisation has taken roots in the rural economy in India. This is so because simple forms of manufacture typical of consumer goods industries and varied service industries, are everywhere developed before the more complex process involved in the production of capital goods, and because the size of the home market at the time of industrialisation prohibits the establishment of optimum-sized plants in the production of certain capital goods

For rural development

Rural development involves a strategy to improve the economic and social life of rural people with particular emphasis on the rural poor. The Government envisaged to reduce the level of poverty of the population to 10 per cent by the end of the Eighth Plan in 1994-95. Rural industrialisation can serve as an effective means of reducing the imbalance between agriculture and modern industry and accelerating the process of rural development This could be achieved in two ways. Firstly, by developing agriculture and allied activities However, there are a number of limitations in this regard and whatever the positive gains achieved in the post-independence period have invariably gone to the rich people All along, the rural population continues to grow at an alarming rate and a large segment is pushed below the poverty line To meet this peculiar situation, the other alternative open is the expansion of rural industries based on indigenous technical know-how and labour-intensive techniques What is actually needed is a broad-based economic policy in which traditional village (rural) cottage industries get a prominent place in the rural economy. Over the period, the development of rural industries has come to be regarded as an integral part of rural development, and to the extent it included the small-scale industries, also an element in the overall programme of industrialisation.

In fact, rural areas, to some extent, possess the requisite infrastructural facilities for the promotion of some key industries who can play a catalytic role in developing rural industries. They occupy an important place in the framework of socio-economic development of rural areas. The development of village industries helps the emergence of efficient, decentralised sectors of the economy. They create more avenue of employment and contribute to the process of self-sustaining economy What is more, the growth of rural industries in rural environment reduces the pressure on land and in particular on agriculture. Rapid growth of village industries in rural areas help the economic amelioration of the rural people, by imparting a new look to their occupational structure.

Rural industrialisation is a key to rural development and rural prosperity It constitutes a significant link in the process of socio-economic transformation of rural areas Primarily, it provides additional opportunities of employment, income, better standard of living and thereby enriches the cultural heritage of the varied social structures in rural areas

Rural industries programme should not be drawn in isolation It should be drawn up keeping in mind the long-term industrial development plan under a broad framework for developing not only manufacturing industries but also industry related activities to generate income and employment in the country, particularly for the vulnerable section of the society in backward regions. The development of rural industries should also take into account enriching the environment, particularly the ecosystem in the rural hinterland Yet another policy measure adopted and implemented shall be to use products manufactured by rural industries in preference to imported goods, particularly in urban market segment. This will open up a vast market both in urban as well as rural areas for the goods manufactured by rural industries and pave the way for its rapid growth in the coming years

The programme for rapid growth of rural industries should be launched like a mass movement, with the emphasis on rural brand Efforts should be made to carry the message of rural development to the rural people This apart, a sure market be created for the rural consumer goods And, the urban and international markets be developed for artistic works The rural industrialisation is an integral part of the

overall rural economy and it will hasten the integrated rural development. The basic need of the hour is to make rural industrialisation as an effective instrument of rural development. Towards this end, the programme has to be interlinked harmoniously with the rural activities, with particular stress on agriculture and forestry.

For the successful rural industrial development, it should be realised that the rural industrial development is an integral part of other sectors of rural life. Therefore, the policy towards this should take a total view which will include the removal of legal restraints, redesigning of physical measures and introduction of technical skills. The administrative set-up, which is evidently weak, must be strengthened by the creation of new and restructuring of present specialised institutions to take care of the various rural artisans. There must be convergence of efforts at the delivery point. The administrative set-up must be responsive and sensitive to the needs of the target group The latter must be motivated to have greater faith in their abilities to regain their rightful share of the market Rural industries are not only capable of better utilising relatively abundant locally available resources but can also help modernising agriculture through provision of certain inputs (e.g., farm equipment and machinery, such as forks, levellers and threshers). The state inevitably has a crucial role to play in this, not only as an 'investor' in terms of creating infrastructure and providing credits but also in offering technical, marketing and other forms of assistance.

For overall growth

A vigorous rural industry sector is vital to the rural industrial and economic growth, and that it may also be relevant to the broad socio-economic objectives of the community. In particular, rural industrialisation is catalytic to rural development as well as agricultural development. This sector suffers from many and varied handicaps which prevent it from allowing it to play its rightful role, and left to itself, the economic forces may not be in a position to remedy the situation. There is, thus, a case for preferential treatment to this sector. While it goes without saying that a wider publicity of the activities of the aid-giving agencies and streamlining their procedures are called for, a more discriminating programme of assistance needs to be designed and operated for ensuring better utilisation of scarce resources available in the rural hinterland. More so, since rural industrialisation increases employment opportunities in rural area, reduces under-employment, ensures steady flow of additional income, increases agricultural productivity, raises the standard of living of the rural people or in other words assists in the integrated development of rural area, this sector deserves special treatment from all government and non-government agencies, as well as the people. Rural industrialisation is synonymous with developing entrepreneurs by proper motivation, training and provision of necessary opportunity and resources. What is more, youthfulnes is an important input because of its capacity to take risk and face imponderables. The need of the hour is that a determined integrated effort has to be made, try out many innovative approaches to establish more rural industries, more commendably among the relatively weaker sections of the rural society; as part of the integrated rural development programme. It is a formidable, uphill task. Apart from the setting up of rural industries in rural areas in general, its challenge involves ensuring covering backward areas and backward classes It also calls for effective forward and backward, rural and urban linkages, social cohesion and coordination between different wings of rural industries on one hand and rural development tasks on the other. All in all, the task is formidable, both in magnitude and quality. But, it must be achieved for a better tomorrow. Rural industrialisation is vital for rural development and economic growth. □

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make their due contribution to development of the economy. This is a bland hope expressed year after year, without any strategy or policy mix having been unveiled to raise the production and productivity in the public sector.

On the whole, going by the indicators and charts and graphs in the survey, the Indian economy has done well in the past year Agricultural production has gone up and so has the output in the manufacturing sector of industry. The foreign exchange reserves situation is comfortable, although it may not long remain so unless appropriate measures are taken to step up exports drastically An ambitious plan has been drawn up for 1986-87 and it is imperative that it should be implemented in full if the overall plan goals of reducing the number of people below the poverty line and generation of higher employment are to be attained. The resources position is hazy and the Government will have to bridge resources gap. □

(Courtesy . Spotlight, AIR)

Subsidised foodgrains for tribals

T.V. Satyanarayanan

Though our foodgrain stocks are overflowing, this doesn't mean that it is in surplus because a sizeable portion of our population still lacks the purchasing power and unable to buy even the minimum quantity of it needed for sustenance. The author feels enhanced production requires equitable distribution and to achieve mainly this objective the Public Distribution System was introduced. Now the Government has launched a scheme for supplying foodgrains at specially subsidised rates to tribal people. But, according to the author, such welfare schemes can succeed only if they are sincerely implemented and properly monitored.

JUDGING BY THE REPORTS from States, the scheme formulated by the Central Government to supply foodgrains at specially subsidised rates to tribal areas is becoming increasingly popular. The response of the beneficiaries, at the end of 1985 when the scheme was implemented was quite encouraging. The offtake of foodgrains has been nearly half a million tonnes. To begin with the scheme is designed to cover the population living in Integated Tribal Development Project areas. Other tribal pockets will be coming under the scheme subsequently.

All State governments have been asked to implement the scheme through the normal fair price shops under the Public Distribution System or by building up distribution infrastructure where necessary Cooperative institutions and Panchayat samitics can also act as distribution outlets. The Food Corporation of India has been asked to ensure that the godowns supplying grains to such areas are adequately stocked.

Non-tribals too included

Under the scheme, wheat is supplied to the beneficiaries at one rupee fifty paise a kilogramme and common variety rice at one rupee eightyfive paise. Since people living in the tribal areas are generally poor, no distinction is being made between tribals and non-tribals in the distribution of foodgrains. In fact, the tribal majority States and Union Territories of Nagaland, Meghalaya, Arunachal Pradesh, Mizoram, Lakshadweep, and Dadra and Nagar Haveli are fully covered, which means that the tribals as well as all other people living there will now get rice and wheat at the specially subsidised rates.

It is expected that a population of fifty million in some of the most backward regions would be covered under this scheme. This would indeed be a boon to those people, most of whom are too poor to take advantage of the open market, or even the normal public distribution system, where the prices are usually high.

Improving the nutritional status

Fortunately, the Government is now in a position to formulate these schemes to improve the nutritional status of the poorer sections, thanks to the comfortable food situation in the wake of increased production. Foodgrains stocks with public agencies as on the first of December 1985 was over 24 million tonnes, of which wheat itself was over 16 million tonnes. The stocks are expected to swell still further this year. No doubt, one way to bring down the stocks within manageable limits is to export foodgrains. But exports have their limitations. The Government therefore has rightly felt that a more fruitful way to make use of the surplus grains is to utilise a part of it for employ-

ment oriented programmes in the rural areas. That is why the Government has now announced that it will provide additional foodgrains for extending the coverage of National Rural Employment Programme and the Rural Landless Employment Guarantee Programme. This will enable small and marginal farmers and landless labourers also to obtain nutritious food while giving them gainful employment and increased earnings. A decision has also been taken to provide grains for the expansion of nutrition programme for young children, pregnant women and nursing mothers. This programme is being implemented by State governments in tribal areas, urban slums and backward rural areas.

Equitable distribution

As it is, it would have been a misnomer to call the present foodgrain stock position as a surplus as long as sizeable sections of the population do not have the purchasing power to buy food. It is only appropriate therethat that special efforts are now being made so that foodgrains reach the poor.

In a way, this is one of the objectives of the Public Distribution System. The system was designed mainely to enable the weaker sections of the society to get foodgrains at cheap prices. However, the working of the Public Distribution System reveals certain weaknesses, which were highlighted at a Workshop on Supply Management held at the National Institute of Rural Development, Hyderabad recently. Statistics show that there are more than three lakh fair price shops in the country and 78 per cent of them are in rural areas. However, there is a general criticism that Public Distribution System works well only in urban areas, while rural areas remain neglected. Many fair-price shops in rural areas exist only in name. Consequently, mass consumption items do not reach the weaker sections for whom they are meant. The problem is particularly acute in remote and inacessible areas. Often one also hears complaints of poor quality foodgrains and other items supplied through fair price shops. One reason for these complaints is the diversion of items to the open market due to the mischief of unscrupulous traders.

Not an easy task

These lacunae would show that implementation of plans to provide cheap foodgrains to poorer sections is not an easy task. There are many loopholes to be plugged. If the schemes like the one to benefit tribal people are to succeed, there is need for proper monitoring at various levels to ensure that the benefits reach the target groups. In this context, the Central Government's step in deputing senior officers to States to ensure smooth working of the scheme is indeed welcome. To strengthen the implemmenting agencies, the Centre has also decided to enlist the support of the Territorial Army units and the National Cadet Corps on a selective basis.

Our country is now determined to have an effective national food security system. By increasing foodgrain production, however, we have only won half the battle against hunger and poverty. Equally important is the equitable distribution of foodgrains. The special scheme to benefit tribal and other poor people is a step in that direction.

(*Courtesy: Spotlight, AIR*)

(*Continued from page* 13)

products of chemical and allied industries, plastics, glass, rubber products, paint and packaging materials.

Twenty-three specified drug intermediates have been exempted from additional customs duty. Additional 41 life-saving drugs are also proposed to be exempted from excise duty.

Excise duty on stoves using kerosene and wood has been abolished. Besides, excise exemption limit in respect of footwear has been raised from Rs. 30 to Rs. 45 per pair.

Press and public reactions

Reactions to the budget have generally been favourable as "pragmatic", "imaginative", "bold", "growth oriented", etc. A section of the press and public, however, termed the budget as "inflationary" etc. □

India-UNICEF accord on child development

India and United Nations Children's Fund (UNICEF) signed a 5-Year Master Plan on March 3, 1986, for providing services to children in India. This assistance covers the period 1985—89 and involves an outlay of $ 175 million. This is the largest commitment by the UNICEF to any single country so far. An additional amount of $ 52 million from supplementary resources has also been earmarked for various other programmes in India.

This programme of cooperation is UNICEF's most comprehensive attempt till now to respond to the needs of children in India. It seeks to initiate, expand and accelerate services and programmes benefiting children and comprises three clusters of activities: convergent services; technical (sectoral) services; and awareness and capacity building.

The convergent services include Integrated Child Development Services (ICDS), urban basic services, women's welfare and social inputs in area development. Technical services cover education, health, nutrition, water and environmental sanitation, prevention of childhood disability, and support to destitute children. □

State trading for socialising economy

Mrs. Kumkum Rathore

Tracing the developments that led to the setting up of the State Trading Corporation of India and later its bifurcation into S.T.C. and M.M.T.C., the author says that state trading does away with all those malpractices usually indulged in by private exporters. It explores new potential markets for our products and has better bargaining capacity to strike foreign deals, thus imparting a "dynamic and realistic" character to our foreign trade. And, at the home front, it helps price stability by holding the price line.

INDIA AND MANY DEVELOPING ECONOMIES have assigned a vital role to state trading to make the character of their foreign trade dynamic and pragmatic. State trading is an organised attempt of socialisation of economic policy related to trade, especially foreign trade. It is advocated to even out trade risks and strengthen bargaining power in the International market. Pursuant to ever increasing international competition alongwith 'protectionism', the role of state trading agencies in many countries has been considered vital and rational. In India, for instance, STC, MMTC and their subsidiaries have been recognised "Potentially powerful weapons for preserving foreign exchange equilibrium and achieving positive policy goals".

It has been an important objective of state trading during recent years to facilitate foreign trade deals with the centrally planned economies such as USSR and other East European Countries where entire trade, domestic as well as foreign, is conducted by their own state-owned trading agencies. These countries pose a problem before free economies where most of trade is in the hands of private traders. It will be in the fitness of things to quote an example from Indian experience in this respect. The Government of India, after independence (1947) desired to develop trade relations with East European Countries but judging the difficulties of their policy of entering into trade agreements with the government or State-owned agencies only, the matter was examined through the Import and Export Policy Committee (1949) under the chairmanship of Dr. Punjabrao Shamrao Deshmukh. The committee was of the opinion that a state trading agency might usefully be set up "to sponsor negotiations on behalf of private importers and exporters with monopolies set up in other countries". In this context, the Government of India decided to incorporate a wholly-owned joint stock limited liability company named State Trading Corporation of India in November 1955 which was constituted in May, 1956. At the time of setting up of this first state trading agency in India, the government did not clearly mention the range of commodities within which it should work. It generated a lot of uncertainty and confusion in the minds of private traders. Later on in December, 1961, the Memorandum of Association of the STC was amended to specify that its central objective included "to organise and undertake trade generally with the state-trading countries as well as other countries in commodities entrusted to the company for such purpose by the Union Government from time to time and to undertake the purchase, sale and transport of such commodities in India or anywhere else in the world . . .". Thus, state trading in India for instance, has served an instrument towards strengthening India's foreign trade with centrally planned economies on equal grounds and effective lines

Why state trading?

A powerful philosophical basis of state trading in third world countries suggests that increasing and active participation of the government in economic affairs is quite essential to remove deeply rooted poverty, stagnant growth and enhance socio-economic justice. None of these objectives can be achieved to the exclusion of others. Hence requires a planned, balanced and comprehensive strategy. Concentration of economic power in a few monopolists cannot be checked unless an organised attempt to socialise economic policies in the field of production, exchange and distribution. To fulfil such accepted goals of planning and development programmes, it is essential not only to impose controls through licensing measures but also to step into trade channels in the economy. Our serveral industrial policies have categorically emphasized the responsibility of the State to ensure overall economic growth with stability and social justice through its instrument 'Public-Sector'

With the beginning of rapid depletion of India's foreign exchange reserves in 1955-56, an export promotion consciousness was witnessed and a crying need to develop a vast network of institutions was felt in the country Through the various export import policy resolutions since 1962-63, the government offered opportunities to join all productive forces of the country to hold its head high and live and grow in all its diversities. India aimed at finding its rightful place in the 'comity of nations' On the one hand export promotion measures were launched in India and simultaneously, the government further extensified the state trading mechanism in the country. on the other Accordingly the scope of STC's activities multiplied and the corporation was bifurcated into two. Thus the MMTC emerged in september, 1963 to handle export and import of metals and minerals. In this way, STC and MMTC-two major state trading organs in India were created to work for achieving broad policy goals set by the government as a part of nation-wide planned process.

Checks malpractices

It has rightly been observed by Dr. K .R. Gupta in his work 'Working of State Trading in India' (1970) that "State trading can be used as an important instrument of export promotion Malpractices of the private exporters, particularly in underdeveloped countries, are a great obstacle in building the reputation of a country's exports. Replacement of private trading by state-trading will remove these malpractices and thereby help in building the reputation of the country's exports. Private exports tend to concentrate their exports on the traditional markets Because of the need for initial investmen. and other difficulties involved, they do not make efforts to develop new markets. There is always the fear that the fruits of the initial investment made by some exporters in creating new markets might be shared by others who do not share the initial expenditure involved in the development of there markets. The state agency holding monopoly has no such fears. Further, with its vast resources, it can afford to spend far larger sums than those which private traders can afford . .. .".

To promote India's exports the STC, for example, has stepped into cultivation of new markets, product development, diversification of traditional exports, popularisation of non-traditional export items abroad, elimination of private traders' malpractices and weaknesses, encouragement of enterpot and off-shore trading, credit facilities to small traders, technical assistance to growers and manufacturers of certain commodities, research into new uses of India's products, adoption of quality control measures and arrangement of participation in international trade fairs and exhibitions etc The STC has launched several popular schemes in this context such as the 'Export-Aid to Small Scale Industries' (EASI) in 1966-67 and the Industrial Raw Materials Assistance Centre (IRMAC) in 1970-71 Its subsidiaries have also played significant role in promotion India's handlooms, handicrafts, cashew, motion pictures, projects and equipments etc. The same is true in case of enhancing export earnings on efficient and profitable lines by way of exporting ores from India by the MMTC and its Subsidiary Mica Trading Corporation of India (MITICO).

For better gains

A state owned foreign trade agency can fetch better prices for exports indeed. A state trading agency may easily reap the benefits of a monopoly in certain goods This is very difficult through private counterparts which are generally weak in developing countries. Due to better bargaining capacity a single buying state owned trading agency is also capable of building new and profitable contacts with foreign trade channels. Thus, a state trading agency is best suited to get the advantages of bulk buying. Therefore, state trading serves as a source of higher revenue for the exchequer on the one hand and enjoys better position in international market indeed. Even in the field of domestic trade, state trading machinery enables the government to check ill-gotten gains of the private traders through indulging in anti-social operations such as hoarding, cornering and speculation, and on the other hand, to modify the economic situation effectively in some trade channels

. . . .and protecting interests

State trading, thus, generates a considerable amount of social and economic gains. On the first place, state trading works for price stability by way of holding the price line on democratic lines. It looks for the interests of both producers and consumers. In order to enable the producers, state trading agencies handle price-support operations. The purchases made by Cotton Corporation of India (AN STC'S subsidiary) and Jute Corporation of India have proved it betterly. Equally, these agencies distribute goods at reasonable

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Enabling villages to meet energy needs!

Dipak B. R. Chaudhuri

Renewable sources of energy appears to be the likely solution to the growing energy crisis, says the author. The recent Conference on Energy Development in New Delhi recommended establishment of Integrated Rural Energy Centres, at least one in one village of every Development Block in the country. These centres, many of them already functioning in some States, will have integrated network of community biogas plants, solar thermal devices, solar photovoltaics, wind mills, etc., making the villages self-sufficient in their energy needs.

ELECTRICAL POWER IS THE MOST convenent form of Energy for use by the domestic and instrial consumers. The conventional routes of electrity generation require coal or petroleum products in ermal stations or natural and engineered falls in assive water streams.

Our country lacks good low-ash coal and currently own deposits are located only in Eastern and Cent-l Zones. We are still importing crude oil and oil oducts like diesel or kerosene. We cannot think of rning oil in boilers for power generation. Transrtation of inferior coal for long distances in the untry is cumbersome and expensive. Generation of wer in the Western Ghats and Lower Himalayas d the North East will involve sophisticated conuction technology and long-distance transmission power to major consumption areas. Large hydel d even super-thermal power projects, these days, juire serious environmental impact studies and en sustained public questioning.

Utilizing renewable sources

On the other hand, India enjoys natural endowments like bountiful sun round the year and the largest livestock population of the world. From the very begining of the Planning Era in the early fifties, our scientists and leaders are toying with the idea of adopting renewable energy. In fact, the Gandhian planners first thought of having biogas from animal dung. The phenomenal increase in petroleum prices in recent years all over the world awakened us to the possibility of harnessing non-conventional and renewable sources of energy. But much has not been achieved so far. That is why a Conference on Energy Development was organized in New Delhi in February to chalk out a strategy for developing a long term energy policy, to meet the demand for Electricity by the end of the Seventh Plan. It also examined the options to go in for rural electrification by a coordinated approach, using both conventional and non-conventional sources of energy. The Conference further discussed various energy conservation measures and the efficient use of coal for energy generation. The Conference highlighted the fact that instead of pressing for new power projects, there should be concentrated attempt to improve the utilization of the installed capacity at thermal power stations. Even one per cent improvement in capacity utilization can save new investments on about one thousand megawatt. It was also emphasized that on going power projects should be completed fast by greater mobilization of available manpower and materials. Before-schedule completion of power projects would indeed be a morale booster.

Today there is almost twenty per cent loss of power in transmission in our country. There is thus scope for substantial reduction in transmission loss. Luckily technologies and equipment have now been identified and larger allocation of funds to transmission system improvement projects have been recommended.

In view of the constraints of railway transportation capacity, the Conference rightly expressed itself in favour of new pithead power stations in the coal belt instead of major consumption centres in areas far from the collieries. For long-distance transmission of power without heavy losses, high voltage direct current (HVDC) transmission was recommended.

Rural Energy Centres

An important decision that emerged from the Conference is that Integrated Rural Energy Centres be set up in at least one village each in the five thousand Development Blocks all over the country. These villages, known as Urja Grams will be self-sufficient in their energy needs- -for domestic, agricultural, village lighting and common facilities and for subsidiary industrial activities. Such Urja Grams- -Integrated Rural Energy Centres—have already come up in Gujarat, Madhya Pradesh. In these villages, community biogas plants, solar thermal devices, solar photovoltaics, windmills will be integrated in a network and may not depend on electricity grids. It was decided that the Rural Electrification Corporation (REC) will also finance non-electricity Energy Generation and Utilization projects.

The Working Groups of the Conference on Coal and Power at the same time considered ways of improving utilisation of coal. The Conference recommended the use of Fluidized Bed Combustion technology by which Coal Washery Rejects and even Shales can be used Bharat Heavy Electricals Limited is trying to popularize this technology.

At present even the coal mines suffer from paucity of electrical power. It was suggested that Coal Companies should use this new kind of boiler for meeting a part of their energy requirements. It was also suggested that there should be dedicated Power Station to meet the requiremnts of the collieries and other strategic industries.

The Conference had also a Working Group on Energy Conservation. It identified various areas where substantial energy can be saved by increasing efficiency. These can be through the saving of diesel in buses and railway locomotives.

The most significant achievement of the Conference however, was the decision to link the use of abundant biomass resources for generation of electricity through Producer Gas route. The marriage of 'renewable' sources of energy and the most convenient form of energy, electricity, would certainly transform the energy scenario.

(*Courtesy* : *Spotlight*, *AIR*)

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prices when there is artificial scarcity in the market. Buffer stock operations of the STC and Food Corporation of India have amply clarified this objective. In other words, export promotion drives and importing essential commodities at fair prices are twin practical objectives of the state trading. Thus a state trading agency can do the needful better than scattered private traders.

Any country's foreign trade is referred to as a primemover of economic advancement. For an economy like ours which is devoid of 'untied and unfattered' external aid and with a low propensity of domestic savings, the only alternative left is to raise export earnings. While private trade channels lack in entreprencurial ability and institutional infrastructure, state trading can determine the pattern of a country's trade. In order to bridge up the gap of imports and exports bill, vigorous efforts for stepping up exports are imperative. As a failure of private trade to materialise the basic objectives, state trading is consequently advocated to produce 'dynamic and realistic' character of foreign trade. In this way "state trading creates a special authority to fully carry out trade policies of the state. It may set examples for the private sector. It helps in finding lasting solutions to problems pertaining to trade, assesses newly conceived developmental activities in relation to the feasibility, efficacy and terms of trade, coordinates various functions of a trading machinery and assumes added responsibility of nationalisation of trade practices."

State trading, to sum up, is not merely replacement of private traders by state agencies but it means a complete change in the objectives, manners and functions of trade. It is based on socio-economic advantages and purposes. It works as positive and powerful instrument relating to trade policies of the Government.

Measures for tribal welfare

The tribal sub-plan covers 26 districts fully and over 97 districts partially in the country. It is proposed to take further steps during the Seventh five year plan for the development of the social conditions of the tribal population including raising productivity levels in core economic sectors such as agriculture, horticulture, animal husbandry, forestry etc. for the socio-economic welfare of about 40 lakh tribal families. The government had also drawn up programme in social services sector such as health services including nutrition and drinking water supply and education. This is in addition to the various measures taken up by the government for removal of exploitation practices.

How to conserve energy in aluminium industry

S.C. Lahiry
S.K. Dasgupta

Energy conservation will be an important parameter in deciding the survival of aluminium industry which is highly energy intensive. The rising cost of electrical power and stringent pollution control measures have increased the cost of production, threatening the marketability of the aluminium. It is essential, therefore, to reduce the production cost through energy saving practices. The authors here give some suggestions in this regard.

INDUSTRIAL DEVELOPMENT has brought in its wake consumption of commercial energy. Commercial energy consumption has grown exponentially in the current century because of general economic growth all over the world. It has maintained a close relation with per capita Gross National Product (GNP), which has direct link with industrial growth. Consumption of metals is a measure of industrial development— in which iron and steel lead the list followed by non-ferrous metals among which aluminium has taken the lead in last few decades. Thus metal production and energy consumption are complementary to each other.

Reducing energy use

The main sources of commercial energy are coal and oil, either by direct use or through thermal power, hydro-electric and nuclear power. These sources account for about 60 per cent of the total energy consumption in the country. Following the trends in developed countries, India also relied on oil energy to a good extent till the jolt given by the oil price hike in early seventies. However, the Indian economy showed a remarkable resilience in confronting the first round of oil price shock, but the continued rise in oil price in the later seventies adversely affected the foreign exchange reserve. National economic growth did increase the value of oil import in spite of substantial growth in domestic energy sources. This has underscored the need for directing full attention to conserving energy in all sectors. Among the metal industries, aluminium industry is the most energy-intensive This paper is intended to focus the attention to the areas in this industry where there is scope to reduce energy consumption and where some success has been attained through technological innovation.

in different processes

The activities in an integrated aluminium plant are : mining and transportation of bauxite to alumina plant; production of alumina from bauxite through leaching technique|processes, smelting of alumina to produce aluminium, and finally processing of the metal to manufacture semi-fabricated products. In all these sectors|units energy is consumed in some form or the other and the largest energy consuming centre in the form of electric power is the smelter.

In the mining sector the energy is generally derived from oil for running air-compressors for drills, for loading and earth moving equipment, and transport. Sometimes electric power is used for these equipment.

Alumina plant uses steam, in the digestion area, which requires coal, and calcination of alumina hydrate is effected by using fuel oil. Some electric power is also required in the alumina plant.

Production of aluminium through electrolysis is mainly based on electric power. Ancillary units in the smelter mainly require thermal energy and the semi-fab units need electrical energy.

Other energy consuming areas are the utilities and general amenities—township, etc.

Approximate energy consumption in various units mentioned above are as under :

Units	Thermal Energy (Million BTU/ Tonne)	Electrical Energy (KWH/ Tonne)
1. *Bauxite Mining etc.*	3	50
2. *Alumina Plant*		
(i) Digestion	10	—
(ii) Thickening, filtration, washing, precipitation, evaporation, etc.	5	500
(iii) Calcination	10	50
3 *Smelter & Fabrication*		
(i) Electrolysis	—	17,000
(ii) Casting/Remelting	5	—
(iii) Anode Paste	5	—
4. *Utilities*	1	500
5. *General*	—	400
Total	39	18,500

(Source : Study Groups Report on Energy Conservation in the Energy Intensive Industries).

It will be seen that the most intensively energy consuming area is the smelter followed by alumina plant in the production units. Energy saving in these two areas would reduce the cost of production considerably, especially when the power tariff ranges from Rs. 0.36 to 0.50 per unit and fuel oil costs Rs. 30,000 per kilolitre.

The existing aluminium plants follow the traditional Bayer's Process for producing alumina from bauxite and Hall-Herault Process for manufacture of aluminium from alumina. Various plants in the country have been set up on imported technical know-how. The plants, other than that of the Bharat Aluminium Company (Balco), have been set up in fifties and early sixties. Balco's plant has been set up in the mid-seventies. Evidently, these plants have been following old technology which are more energy intensive compared to modern plants. Certain modifications and modernisations have been attempted and implemented by Indian Aluminium Co. (Indal) and Hindustan Aluminium Co. (Hindalco) so as to reduce the consumption of energy, and also improve general performance. Balco's plant has been fully commissioned only recently (1984), delayed by about 5-6 years due to inadequacy of power supply. In view of this, assessment of requirement and attempt towards improvement can be conceived now. All these companies have their Research and Development units where various programmes are taken up for performance improvement, product development, etc. Efforts made towards energy saving and performance improvement may now be examined.

Bauxite mining

Use of large diameter and longer drill holes for blasting has improved utilisation of air compressors by way of reduced idle running and thereby saving energy.

Contiguous mining and loading operation by re-orientation of face development for obtaining blended grade bauxite in place of working several faces at the Bagru mine of Indal has improved machine performance and reduced energy consumption.

Use of all aluminium trucks in Indal mines is another energy saving practice. Changing over from rope shovels to hydraulic shovels by Balco is a step towards better production with less energy.

Computerised mine planning and sequencing of operation planned in National Aluminium Co. (Nalco's) mine and new mine of Balco are conducive to energy conservation.

Ropeway transportation of bauxite from mines at hill top to railway loading yard, causes substantial saving on imported P.O.L. required for road transport and total energy need.

Alumina processing

Bauxite digestion to produce alumina is done either through low or medium or high pressure leaching. Existing alumina plants use high pressure leaching requiring higher energy consumption because of the characteristics of the bauxite.

Tests conducted on the samples from the Panchpatmali (Pechiney) and Gandhamardan (Hungary) bauxite deposits have shown that the former can be digested under low pressure and the latter by medium pressure leaching Nalco's plant will use low pressure leaching Balco is considering to use medium pressure leaching for the Gandhamardan bauxite whereby there will be energy saving, and waste heat recycling will enable some cheap power generation.

Other development in this area is the adoption of "Double Digestion System" which is being considered by Hindalco with knowhow from MYF Raw Material Consultant, Zurich. In this system the bauxite (trihydrate) is first digested at low temperature and pressure and then the digestion portion is separated out after which the remainder monohydrate is digested at high pressure. Double Digestion System is reported to result in saving of 1.4 tonnes of steam per tonne of alumina. The system needing an investment of Rs. 50 million, the payback period is estimated to be only 2 years for alumina plant of 200,000 tonnes per annum.

The alumina hydrate is presently calcined in rotary kilns where the energy consumption is higher than modern practices. Development of fluidised bed calcination has reduced the energy consumption by about 30 per cent of fuel oil. Modernisation of scheme of Hindalco to adopt this system|process, available from Lurgi, West Germany, has been approved. The fuel oil consumption is expected to get reduced from 0 130 KL to 0.086 KL per tonne of alumina. With the system established Hindalco will scrap the rotary kilns. The Nalco project will also adopt this technique.

In Balco certain steps are being considered under UNIDO assisted programme whereby the improvement is to be introduced in the rotary kilns system. By introducing the change the saving in fuel oil is expected to be 20 per cent. The modification in one kiln for demonstration would cost around Rs 12 million. There would be power saving to the extent of 33 per cent. The matter is being pursued.

Indal has introduced some improvement by which about 20 per cent saving has been achieved Certain R & D activities are on the process and additionally fluid flash calcination under pilot plant testing would enable 20 per cent saving in energy.

Smelter

The existing aluminium smelters in the country are based on conventional Hall-Herault Process with low amperage cells having current intensity of 50-100 KA which require 16,000 KWH (D.C.) or 16,500 KWH (A C) electrical power.

It is understood that Indal has changed over from usual soderberg anode to prebaked anode in some of their smelters and improved its smelting capacity with reduced power consumption.

Balco has automatic voltage control system, "Alumini 3" supplied by USSR, which helps better power utilisation. Computerised control system regulates anode-cathode distance (ACD) to ensure minimum line resistance and prediction of anode effect which lowers power consumption.

These improvements, however, could not pay much dividend because of inadequate and uncertain power supply with interruptions.

The smelter of Nalco will use prebaked anode system and will have cells with current intensity of 175 KA It is expected that power consumption will be 13,600 KWH only per tonne.

Balco has already started, and Indal is in the process, to use lithium carbonate in the bath of the smelter which is expected to reduce power consumption and control fluorine emission.

Hindalco is negotiating with Kaiser Aluminium Chemical Corporation (KACC) to obtain the "retrofit" technology. KACC has reportedly modernised one of their existing plants and brought about substantial saving in energy and carbon consumption. I is claimed that adopting 'retrofit' the older smelte would have the advantage of : lower power consumption-13600 KWH against 16500 KWH; increase cell life-2500 days against 1200 days; and reductio of 5 per cent in carbon consumption

The system would not need super structure, ne cells or new bus-bar. It is a matter of optimisin cathode design, maximising anode area, optimisin electrolyte composition and using computerised operational practices.

Hindalco has reduced consumption of furnace in baking furnace through computer control firi system based on imported know-how from SETRA LYON, France.

Fabrication pla

Aluminium metal is usually cast as ingots, bille etc., from which semi-fabricated materials like extr sions, rolled products, rods, etc., are manufactur Evidently, the processes involve additional ener consumptions for remelting. Continuous rodmaki through Properzi mills saves lot of energy and all t primary producers have such mills

Aluminium alloy conductor rods are usually ma by extrusion which limits the length of rod there restricting the use of alloy conductor wire. Possibil of manufacturing alloy conductor rods through Pr perzi process has been established by Balco, Ind etc., and await field trial report on wire drawi and use. This will effect saving in energy in manuf turing and enable better transmission of electri power with reduction in power loss which will be cond stage of energy saving.

Continuous casting of strips and sheets from metal eliminating the process of slab casting, sca ing, etc., will enable a good saving in energy. Light Metals have gone ahead in having the proc for foil stock manufacturing. Hindalco has propo to import such equipment to modernise their manually operated strip mill The process besi causing saving in energy increases the production way of lower melt loss.

Installation of automatic gauge control syst (computerised) effects saving in energy by reduc scrap otherwise generated due to uneven gauge, Balco has such an arrangement.

International developm

The improvement made in domestic plants so has been described above. In the international ar especially in advanced aluminium producing countr several research programmes are progressing to duce the energy need thereby making the m cheaper. Some of them are described hereinafter to dicate the thrust that may be given in the countr

Fluidised bed calcination

Modern alumina plants are going in for fluidised bed calcination because of substantial saving in fuel oil (upto 50 per cent) compared to rotary kilns. The reduction of radiant heat loss and improved waste heat recovery brings in economics of operation

Sumitomo process

It is reported that M|s Sumitomo Co., Japan, has improved upon the all-Herault Process by which power consumption is reduced by 12-20 per cent and cell life is increased by more than 50 per cent. The power consumption in this process is around 14400 KWH (A.C.) as against 17,000 KWH per tonne of metal through improved cell stability and least voltage fluctuation.

Titanium Boride/Carbide Cathode

Titanium di-boride or carbide used as cathode has been found to be promising due to superior electrical conductivity and strong wetting by molten metal. In this case the cell lining being made electrically neutral decreases flux absorption. Magnetic fields are almost eliminated which is considered important in high amperage cells The power saving is expected to be around 15-20 per cent. The increased production with saving in power and longer cathode life may probably support the high cost of the metal refractory.

Modified anode

The anode patented by Reynolds Metal Company has sandwiched carbon slabs between metal plates under pressure This reduces carbon loss, minimises anode voltage, lowers electrical resistance and operates close to both metal interface at higher current density which ultimately results in power saving too.

Silicon Carbide side wal

This material would allow thin wall lining in replacement of thick silica-alumina refractory bricks over carbon plate. The increase in the capacity of cell, anode surface and total current helps conservation of energy. The cost-effectiveness is to be established by plant scale trial.

Carbo-Thernic Process

The process may use either natural bauxite or alumina. In the case of bauxite the material is reduced in an electric arc furnace whereby fused alumina is produced and the impurities comprising of an alloy of iron, silicon, and titanium with aluminium are discarded. The fused alumina is then reduced in another furnace in presence of pure carbon whereby aluminium is produced. A little carbide formed may further be decomposed at high temperature to metal and carbon. The process claims lower energy consumption compared to Bayer—Hall-Herault combined process.

Reduction of alumina with carbon will produce similar results but here the Bayer Process remains.

Toth Process

The process, named after the inventor (Charles Toth), consists of exchange reaction between aluminium chloride and manganese metal. Bauxite mixed with coke is chlorinated and through fractional condensation and purification aluminium chloride is formed. The chloride reacted with manganese produces aluminium. High manganese requirement needs a large scale test result for economic feasibility although the power consumption is very low and any grade of ore may be used.

Sub-Halide Process

Alcan developed a process which consists of making aluminium alloy by smelting a mixture of bauxite and coke in an electric furnace and then treating the alloy with aluminium chloride vapour at high temperature wherefrom the resulting monochloride vapour is passed to decomposer to produce aluminium during cooling by molten aluminium droplets. The aluminium trichloride is recycled.

Chloride Electrolysis

Alcoa smelting process, as the name goes, consists of chlorination of alumina to produce aluminium chloride and then electrolysis of molten chloride. The process claims reduced electrical energy, less pollution and more flexible operation. The power consumption is expected to be around 12000 KWH per tonne of metal.

What needs to be done?

The original chemical process of aluminium making was revolutionised by Hall-Herault Process of electrolysis of alumina in a molten bath with aluminium floride. The rising electrical power cost and stringent pollution control measures have increased the cost of production threatening to out market the aluminium metal in spite of its energy saving physico-chemical properties. It is essential, therefore, to reduce the cost of production through energy saving practices. Approach to the Seventh Five Year Plan has clearly enunciated that overall energy intensity of the economy should be reduced, the efficiency with which energy is utilised should be increased and the desirable pattern of fuel consumption promoted. Energy consumption will be an important parameter in deciding new investment. Statutory as well as promotional measures including energy audit of energy intensive industries will be taken up during the Plan period and financing of energy conservation investment should be given preferential treatment.

In the given situation, it is suggested that Indian aluminium industry should try directional research which is proven or partially proven and not have the luxury of emperical venture now. This alone can provide quick result without much need of additional investment. The areas may be :

(i) improvement in rotary kiln calcination to reduce fuel oil consumption and progressive

(*Continued on page* 34)

Need India miss the biotechnology bus ?

Subhash J. Rele

Biotechnology has ushered in a new era of industrial advancement today. Japan regards it as "the last major technological revolution of this century". With biotechnology promising vast dividends in fields and industry, can India afford to miss this golden opportunity? The author feels something concrete is not being done at present in the country to harness this revolutionary technology. Today, in India, we talk of the need to adopt electronics and computers in a big way but not of biotechnology. So, it is high time we adopted a definite policy and direction in this regard, feels the author.

THE BIOTECHNOLOGY AND GENETIC ENGINEERING revolution which is sweeping the world, particularly the industrially advanced high-tech countries, has few parallels in recent history. Biotechnology is perhaps the fastest growing technology. In effect, it is a cluster of discoveries which could change the face of industry during the next few decades producing huge dividends for those who back the right business. It is an aspect of technology concerned with the application of biological and engineering data to human problems. It is a relatively new development involving genetic manipulation by engineering deoxyribonucleic acid (DNA) of cells. It is the use of complete living cells or parts of living cells to produce new or improved products or services. This has enabled scientists to bypass the normal sexual reproductive cycle for upgradation of crops and animals. Geneticists believe that in the next fifteen years these techniques would open the way to produce new crop plants which will be more resistant to diseases.

Biotechnology : New hope

In a remarkably short span of a decade, these technologies have brought within the realm of possibility vast range of ideas, for example, bio-fuels or energy crops that grow rapidly to produce huge biomasses which can be directly used as fuelwood or processed into alcohol or other fuels. Biotechnology and genetic engineering technologies can be used to solve the vexing problem of communicable diseases, control and regulation of human fertility, improving human breeds, soil, fertility and crop productivity as also in better management of the human environment. Genetic engineering has become one of the most powerful and awesome skills acquired by man since the splitting of the atom

Among the countries, Japan regards biotechnology as "the last major technological revolution of this century". After years of lagging behind in sophisticated bio-end genetic engineering technologies, it is now making a serious bid for industrial leadership in this expanding field. At present, however, the US leads with an investment of over $ 500 million. Japan has set aside $ 59 3 million and Britain $ 44 million.

Position in India

What has been the progress of biotechnology in India? Has the biotechnology revolution by-passed our country ? For a vast country like ours with tremendous genetic resources, biotechnology and genetic engineering provides exciting opportunities for growth. Dr. P. M. Bhargava, Director of the Centre of Cellular and Molecular Biology, Hyderabad, recently observed that while this country has recognised the compulsion of developing biotechnology, it has barely made a start with using it. While much is being written and talked about the scope for electronics and computers, not many seem to be aware of the promise of biotechnology and genetic engineering. Only very recently Rajiv Gandhi, our Prime

Minister, referred to these technologies and stressed the need to develop them. Why is biotechnology not given the same priority as is being attached to computers? Is it not vital to growth? Some orthodox sections in the country argue that biotechnology has an inbuilt potential for abuse and therefore must not be thought of. Like any other tool, biotechnology can be used for many purposes. It all depends on the people using it.

Biotechnology in seventh plan

Many in the country are convinced that biotechnology is an area of high technology with large potential growth offering opportunities for the renewal of various existing industries and the creation of new ones. This new technology can be used both by large scale and small businesses although initially capital and development costs are high for some processes. We are assured by our planners that biotechnology will receive a big boost in the Seventh Plan period The Government plans to accelerate basic research programmes in the field of biotechnology to break yield barriers in major crops and reduce dependence on non-renewable sources of energy In the wake of liberalisation of the Indian economy the tempo of activity in biotechnology is likely to accelerate as several new projects are being planned India has the necessary scientific and industrial infrastructure. Market potential is significant The corporate sector has made significant investment in biotechnology. Various concerns are taking keen interest in this new technology and have plans to expand in this area.

The bottleneck

The official recognition of indispensability of this new technology resulted in the setting up of the National Biotechnology Board in late 1982 mainly with a view to promote, coordinate and fund biotech research in the country. The Board has chosen genetic engineering, photosynthesis, tissue culture, enzyme engineering, alcohol fermentation, amino technology as areas of immediate interest. Recently, the NBB has been a victim of a lot of criticism. Detractors point out that the agency does not seem to be interested in the rapid development of biotechnology as such. The Board is not a full-fledged department of the Government and all of its members are ex-officio appointees. Not one of them is a biologist. They sit on the Board by virtue of being heads of various departments like atomic energy, space research, science and technology Another criticism levelled against the working of NBB is that it has not been able to spend a reasonable fraction of its budget for support to research.

There is a growing awareness of the commercial potential of biotechnology and efforts are being made on a wide front to develop indigenous products and a large number of research institutions have active biotechnology research programmes. In furtherance of this objective, the Government has also set up a central facility to produce critical inputs for biotechnology research. Roughly, over sixty research and development institutions are currently engaged in research work. One more point of criticism is that the NBB is dormant—the only significant initiative taken by it was to encourage and arrange for the import of Rs 12 lakhs of a number of enzymes needed in biology experiments.

Gene bank facilities

Recently, a research centre devoted to recombinant DNA research has been established. The immediate goals of the Centre would be to develop tools for genetic engineering research and the long-term objective would be to enter biomedical research with special relevance to tropical diseases. The Indian Gene Bank equipped with most modern facilities will store about 50,000 seed and pollen accessions threatened with extinction The Bank will serve as a centre to cater to the needs of plant breeders in India and the Third World It is equipped with seed germinator, seed digitor moisture, computer seed counter, etc In addition to long and medium storage of seeds, the Bank will initially carry out research on pre-storage treatment, biochemical storage and post-storage handling and re-use.

Another heartening development is the establishment of the first International Centre for Genetic Engineering and Biotechnology (ICGEB) near Delhi with the help of UNIDO (United Nations Industrial Development Organisation) for promoting international cooperation in developing and applying peaceful uses of genetic engineering and biotechnology, especially for developing countries, as well as training of scientific staff in the Third World At these centres prescribed safety levels are being created to handle genetically engineered micro-organisms, since these micro-organisms if let out into the atmosphere could prove to be deadly. Most pharmaceutical product and vaccine producers are doing desk studies and test tube experiments. Many Central Scientific and Industrial Research (CSIR) labs are doing fermentation technology research.

Separate discipline

The question that is uppermost in the minds of scientists and policy makers is : Will biotechnology evolve as a separate discipline in India? Industrially advanced countries have found out that biotechnology has not only opened the doors to new technological frontiers but is an ecologist's dream as well. Biotechnology promises new food, new sources of energy, a multitude of new medicines and new methods of pollution control. In a country like ours the potential of biotechnology and genetic engineering in improving agricultural productivity is vast. Why is our Prime Minister who, day in and day out, talks of

(Continued on page 34)

Case for a national book policy

M. K. Kaul

India, though well ahead in several spheres, still lags in the field of book publishing. A number of problems, according to the author, beset the book publishing scenario in India—rising costs, limited print, lack of serious young authorship, non-availability of finance, etc. Driven by the profit-motive the publishers give prime importance to English titles thus ignoring the needs and aspirations of our regional language readers. All this, the author feels, calls for framing a National Book Policy, providing incentives and conferring the status of industry on the publishing trade in India.

FROM THE DAYS OF MOHENJO DARO to the present day India—the tenth industrially developed country in the world and the first among the third world countries in publishing, is indeed a stupendous achievement. Yet, it might sound rather ironic that India's per capita-consumption of the written word comes to bare 30 pages against 2000 or so of the leading publishing countries. We have miles and miles to go to satiate the book-hunger of our millions of neo-literates who speak in hundreds of different dialects.

The question, that somebody may ask is, why is it so? The question, of course, is as simple as it is complex. And it was precisely to find an answer or at least to make an attempt, that a national workshop on "National Book Policy" was organised in the capital recently under the aegis of the National Book Trust.

The workshop, though threw up as many questions as it answered, it certainly helped in bringing an awareness among the educational planners, educationists, publishers and host of other concerned that "a national book policy" was as much vital as the much sought after and publicised "national education policy".

The problems

It will be in the fitness of things that we take a look at some of the irritants that the country is faced with in providing books of quality at cheaper rates to the reading public which, rather unfortunately, appears to be losing interest in the serious reading. A very cursory look at the book publishing scene in India today shows that the rising costs, limited print runs, lack of serious young authorship and readership coupled with non-availability of finance and limited distribution channels is eating into the very vitals of both the publishing and reading world.

What is scenario like of the need of the books and their availability? Take, for instance, the case of the children alone. Today there are estimated to be 169 million school-going age children, and, suppose, we take all of them enrolled in schools, they would be out of the schools by the turn of the century. A large number of them, by the way, would be the first generation learners. The country faces 70 to 80 per cent drop-out rate at the middle-school level. Thus their number in absolute terms is quite enormous. They have to be provided with books and other reading material if they are not to lapse into illiteracy.

The question then arises is : books in what language. According to a recent survery by the Centre's Working Group on "National Book Policy", school

education is administered in 58 languages in the country, though, it says, 1961 census had put the number of "mother tongues" at 1652 and the number of languages vary between 200 and 700, depending on the criterion chosen for determining a language. But the medium of instruction keeps on narrowing as the education system goes up the ladder.

Regional languages ignored

Today, though India is the second most populous country with nearly 15 per cent of the world population residing in it, it counts hardly for three per cent of the world book titles. What appears even more paradoxical is the fact that while English knowing population account for two to four per cent in the country where there are over a dozen languages with a history and literature spanning over at least 1000 years, and which are accepted as the major state languages, the English titles come to around 50 per cent and the rest of 50 per cent being shared by the other Indian languages. And, mind you, India ranks third after the United States and the United Kingdom in the production of English titles and most of them are no-fictional, while the Indian language titles are mostly literary.

It means, the country today is overbearingly giving importance to the language of elitist while the needs of the masses are getting crushed. It is no denying the fact that English will continue to dominate the Indian literary scene for quite sometime to come because of historic and international compulsions, one cannot overlook the need and importance of development of the Indian languages for the well-being of the country. Another thing that is happening with the Indian language book scene is production of cheap books which find the ready market and thus ensure the quick and profitable returns to the publishers. The draft report of the Working Group: "Towards a National Book Policy", has aptly commented on the situation. It says, "All over the country, and in the Hindi-Urdu-Punjabi region in particular, the market is flooded by cheap, popular paperbacks, which, while aiding in the creation of reading habits, presents materials ranging from outright undesirable to less than desirable".

Facility misused

Another poignant point that it has brought out is the misuse of Open General Licence under which the importers import essential items for use in the country. Says the report, "In the name of education science, technology, such books as nude photography, decorative gardening are imported, besides books which are dated in different subject areas." Another fact that it has brought out is as to how the book importers circumvent the 1000 books per title import policy to their advantage by "importing the same title under different names." The working group observed that 45,000 copies of a certain book on India published abroad have been imported in 1984-85 under different names of import.

Thus one can see that unscrupulous publishers and importers of books are virtually dictating the terms while the genuine book readers suffer on account of non-availability of books or exorbitant prices of the books. Children's literature is, perhaps, the best example one can cite. Even among the children it is the tribals whose children suffer most. First, their language is not recognised and bulk of whom are illiterates and to quote the working group again "whom education has bypassed is, to say the least, pitiable". No effort has been made on the national level to make a systematic survey of the educational and subsequent needs of this segment of the Indian population.

Industry status needed

Perhaps, the best course of action will be that the educational planners and the other concerned should take concerted efforts to attract the publishers to take up such ventures the government should confer status of industry to the publishing trade so that finances do not become a serious constraint in bringing out cheaper but quality books. The new budding authors should be given encouragement by various incentives and creation of fellowships, as was suggested by the national workshop. They should be commissioned to write books so that the looming uncertainty of finding of publishers for their work is mitigated. The emphasis should be on paper backs which are economical and, as has been suggested by the working group, the government should import dried up pulp against the foreign exchange earned through the export of books under the existing trade agreements.

And for all this we have to act now and decisive steps have to be taken to alter the dismal scenario of the book world of the country. □

(Courtesy : Spotlight, AIR)

Delhi master plan under revision

The Master Plan of Delhi, which has been in operation since 1962, is being modified extensively with the perspective upto the year 2001.

The draft perspective Plan has taken into consideration the problems of environment, ecology and natural conservation. The conditions for health, safety and convenience of the citizens have also been kept in view. All these aspects have been reflected in the proposed measures for building of parks and evolving urban design with the objective of conservation of urban heritage and ensuring richness and variety of community life. □

Kavalur observatory, an Asian landmark

Rajendra Prabhu

The setting up of 2.34 metre telescope at Kavalur (Tamil Nadu) by Indian Institute of Astrophysics recently is a landmark in India's effort at self-reliance in scientific endeavour. Considered as Asia's largest telescope, the Kavalur telescope and observatory join the group of other such observatories in the country at Kodaikanal, Ootacamand, Pune, Nainital, etc. The author observes India is specially suitable for astronomical studies as it is near the equator and has clear sky for larger part of the year.

A SCIENTIFIC MILESTONE WAS REACHED on January 6, 1986 when Prime Minister Rajiv Gandhi inaugurated the 2.34 metre telescope at Kavalur in Tamil Nadu set up by the Indian Institute of Astrophysics. The Prime Minister on this occasion hoped that Indian astrophysicists would restore to the country the glory it had in astronomy several hundred years ago What he was alluding to was the foremost work in astronomy by such great Indian astronomers as Varahamihira, Aryabhatt and Bhaskaracharya who had said many years before Kepler and Galileo that the earth was round and that the planets were going round the sun. This they said even when everyone in Europe, including its elite, still believed that it was the sun which was going round the earth.

Subsequently, there was an eclipse in the Indian efforts at star gazing. The first touch of English education only helped revive this innate interest in astronomy. The Indian Institute of Astrophysics was set up 200 years ago when the first observatory was built at Madras. Recently, the work of such eminent Indian astrophysicists like late Dr. Vainu Bappu, present member for science of the Planning Commission Prof. M. G. K. Menon within this country, and of Prof. Chandrashekhar abroad, has been widely recognised. All this work on galactic forces is of seminal interest in understanding the universe.

A landmark

The telescope and the observatory of Kavalur joins the group of other such observatories in the country at several places like Kodaikanal, Ootacamund, Pune, Nainital etc. These observatories have not only been tracking the stars but also making important discoveries regarding their origin, growth and decay. In addition to optical telescopes there are also radio, telescopes, like the one at Ootacamund which help to tell us a lot about the radio stars or stars which could be recognised only because of the emission of radio waves from them As is well known, stars are born, grow and decay over millions of years becoming red giants and white dwarfs in succession and finally end up becoming radio stars and black holes. It is a fascinating phenomenon which gives an insight into the nature of the universe and the fundamental forces which are behind energy and matter. So when the astronomers gaze into the depths of the galaxies that are billions of miles away, they are bringing knowledge of these basic forces nearer to our comprehension It is obvious that a country as large as India with a large scientific and technological manpower could not afford to lag behind in this area as well. The Kavalur optical telescope will be followed by a large radio telescope to be set up, perhaps at Pune. This would be in addition to the radio telescope at Ootacamund. India is specially suitable for such astronomical studies as it is nearer to the Equator and has a clear sky for the larger part of the year. The radio telescope at Ooctacamund for instance, closely follows the axis of the earth which makes astronomical observations easier as the earth rotates.

Probing cosmic mystery

A related work is also of significance. This is to arouse in the young great interest in astronomy. For this, planetaria have been set up in several places now, alongside children's science centres. By providing an overall view of the universe through charts, night sky observations and models, these planetaria introduce the young minds to the fascinating mysteries of the universe beyond our earth's frontiers. Simple lessons in astronomy and astrophysics are now part of the syllabus of all schools. At higher level, there are courses in astrophysics from graduate to doctorate level. The result is that several students take to astrophysics as a career. Among many recent contributions of young Indian scientists is the hypothesis that comets have two tails instead of one, consisting of plasma particles which would be further checked by the observations as the Halley comet streaks across the Indian sky this year.

A step to self-reliance

It is worthwhile to remember that the late Dr. Bappu himself was the discoverer of a new comet which is named after him. Our astrophysicists have also developed adequate expertise in designing the telescopes, of both the optical and radio variety. It is one more effort at self-reliance in scientific endeavours. One may recall that India has set up with its own efforts large nuclear power plants, designed and built four-stage rockets, remote sensing satellites, gone to the ocean depths to rake in metallic nodules and set up all-weather stations in the Antarctic. Whether it is nuclear reactors, large optical telescopes or deep ocean probes, what is significant is the level of self-reliance and with it, the confidence of Indian scientists that, given the backing, they are behind no one, pushing forward the frontiers of human knowledge.

(Courtesy · Spotlight, AIR)

(Continued from page 30)

ushering in electronics revolution, not harping on this new technology also?

It is well-known that energy crops can be bio-engineered to contain high quantities of oil or carbohydrates and to yield valuable products such as ethenol and reconverted into methane. Biotechnology can play a vital role in forestry and pastoral afforestation with new species of quick-yielding fuel trees. In food crops, genotypes can be constituted or "programmed" specifically to yield high protein grains, and to resist stresses, nutrient scarcity, or extreme heat or moisture

Starting lines

The applications of biotechnology would be a catalyst for the next big leap in agricultural production on the eve of the 21st century. While we gear ourselves to catch up in computers and the telecommunication, biotechnology is a new challenge at the starting line. We have a science base to undertake this exciting journey. The country cannot afford to miss this unique opportunity to develop competence in a vital field which will soon be a major factor in geo-economics.

Twenty-first century is still 15 years away. Biotechnology era is knocking on the doors of industrial India. We must open the doors wide to let this new technology in. India has all the necessary facilities for going into biotechnology in a big way. What we need is a definite policy and fillip to induce firms to enter the hitherto virgin arena. Biotech is advanced by people who take risks to put them into effect. At present even a sense of direction is lacking. We may miss the bus if we do not take note of the few prospects and constraints in a manner which would employ our available scientific and engineering talent. It is essential that a climate conducive to growth of this new technology is nurtured. This also demands a radical change in our attitudes and outlook and a willingness to adapt ourselves to the requirements of the new technological culture. ☐

(Continued from page 28)

or later change over to vertical fluidised bed calcination system,

(ii) reduction in bath temperature through addition of lithium carbonate and|or magnesite;

(iii) anode improvement by either changing to pre-baked type or sandwiched type;

(iv) use of computer for automatic voltage control;

(v) introducing continuous casting technology; and

(vi) progressive change over to electrolytic cells in the range of 150-200KA.

These areas of improvement if successfully implemented can save the power easily by about 1000—1500 KWH, reducing the consumption from 16,500 KWH to 15000 KWH in a short time. In this consideration, the most importan assumption, however, is that the power supply must be steady and regular. ☐

What pollutes Ganga:

About 100 towns and 264 industrial units discharge sewage water and effluents respectively into Ganga. Depending on the raw materials used and items produced, the effluents from industries contain organics, urea, ammonia, suspended solids, oil and grease and metals such as zinc, chromium etc. ☐

Welfare of SCs and STs in Seventh Plan

THE CENTRAL GOVERNMENT HAS given top priority to socio-economic development of SCs and STs during the Seventh Five Year Plan. The total amount earmarked under Special Component Plan for the development of Scheduled Castes is Rs. 6,303.32 crore and for the development of Scheduled Tribes under the Tribal Sub-Plan Rs. 6,199.63 crore. In addition, special Central assistance amounting to Rs. 930 crore for the development of Scheduled Castes and Rs. 756 crore for the development of Scheduled Tribes has been provided during the plan period.

The Centre has already sent to all State Governments and Union Territory Administrations guidelines for implementing various schemes for the welfare and development of Scheduled Castes and Scheduled Tribes. The Government has been reviewing regularly the progress made in the implementation of these schemes by the States and Union Territories. □

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Social welfare strategy in Seventh Plan

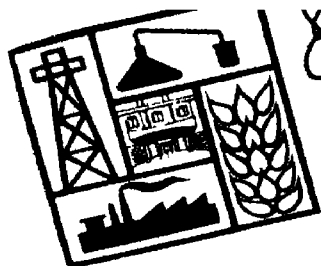
THE OUTLAY FOR CENTRAL and Centrally sponsored schemes in the social welfare sector for the Seventh Plan is Rs. 799.97 crore. The plan outlay for the States and Union Territories is 191.87 crore and Rs. 20.52 crore respectively.

The social welfare programmes are designed to supplement the larger effort at human resource development. The objective is to improve the quality of life and to cater to the needs of vulnerable sections like children, women and the handicapped through organised and sustained development activities. Social welfare services in their various facets are, therefore, preventive, promotive, developmental and rehabilitative in nature.

The welfare of children, women and the disabled is linked with the development of family, the basic social unit. Child welfare would be given the highest priority. The basic minimum child care services would be extended to the most vulnerable group of 0-6 years of age in order to reduce the high incidence of child mortality, morbidity and malnutrition in the country. More emphasis will be laid on enhancing the capabilities of the mother to look after the health and nutritional needs of the children. Stress would be laid on further strengthening the supportive services to the family.

In the programme for women, greater emphasis would be on the generation of both skilled and unskilled employment and promotion of opportunities for higher level skills through proper education and vocational training. Areas for reducing household drudgery would be explored with the help of science and technology. The lacunae in legislation would be reviewed to make the laws more equitable and practical between men and women.

Physically handicapped would be encouraged to pursue education and vocational training through scholarships and promotional aids in order to draw them closer to normal stream of life. Prevention of disabilities through early detection and treatment of the physically handicapped would be given relatively high priority compared to purely curative services.

The Central Social Welfare Board and its counterparts in the states would be required to shoulder more responsibilities in promoting, strengthening and stimulating voluntary effort in different sub-sectors of social welfare, especially in the areas of children's and women's welfare. □

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Labour scene in 1985

NEXT ISSUE

Improving rural Scenario

Better water management during Seventh Plan

GREATER EMPHASIS WILL BE LAID on improving water management in the irrigation commands with a view to augmenting agricultural production during the Seventh Five Year Plan. The Plan also aims at intensifying the water and soil conservation programmes with a view to checking soil erosion and land degradation, and enhancing the productivity of available land. Emphasis will be laid on proper maintenance of the works completed during the Sixth Plan.

About 6 million hectares of land was brought under various water and soil conservation measures during the Sixth Plan, thereby bringing an aggregate area of about 29.4 million hectares under these measures by the end of the Sixth Plan.

At present, the Centrally-sponsored scheme of Integrated Watershed Management in the catchment of flood prone rivers covers 200 watersheds in 8 catchments in the Indo-Gangetic basin. This scheme will be continued and intensified during the Seventh Plan period. In order to achieve improved water management, proper linkages will be developed during the Plan in the implementation of the programme in such a way that the irrigation engineers, agriculture scientists and those engaged in managing irrigated agriculture could properly coordinate their activities. ☐

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Labour scene in 1985

S. Dharmarajan

As in the previous years, strikes during 1985 accounted for larger share of mandays lost compared to lockouts. According to the author, statistics show the inadequacies of labour policy, the rectification of which is central to any meaningful progress towards attainment of the Seventh Plan goals. He is of the view that for the success of a labour policy aimed at removing irritants which cause work stoppage, it should be based on a consensus.

THE LABOUR SCFNE has been through a year of achievement in terms of declarations of intentions and definitions of goals spurring hopes of finding a way out of the problems which have plagued it for long. But at the end of the year the sign-posts are yet to be sighted.

The absence of a proper data base blurs tangible achievements. It is difficult to quantify how many jobs have been generated by liberalized approach, emphasis on productivity and on higher technology on which economic policy pronouncements have centred since the new leadership assumed charge. At the same time, statistics compiled by government agencies themselves point to the inadequacies of a labour policy, the rectification of which is central to any meaningful progress towards the attainment of Seventh Plan goals, namely, alleviating poverty, mobilization of domestic resources and the like.

Strikes and lockouts

The official figures provisionally place the loss of mandays because of strikes and lockouts last year at 29.2 million. Of course this was lesser than in 1984 when the loss tally was 55.13 million. But it is not without a disquieting trend, particularly in the context of persistent talk of modernization of industry to make it more competitive and face global challenges It is disturbing to note that lockouts account for 64.7 per cent of the manday loss against strikes claiming 35.3 per cent. And, 17 per cent of the total lockouts was in response to the strikes. One could draw comfort in that during the five-year period (1980-85) the loss last year exceeded only that of 1980 when it was 21.93 million. Still, the abrupt reversal of the strikelockout ratio of 1984 (Strikes 71.8 per cent and lockouts 28.2 per cent) reflect the changes in industry and limitations of claims on induction of new work ethic.

Details of the figures for 1985 are not fully available but it is to be noted that over the years strikes have generally accounted for a larger share of mandays lost compared to lockouts. However, in 1982 as well as in 1983, mandays lost because of lockouts, being 68 per cent and 66 per cent respectively of the total, was more than that of strikes. During 1984, there was a reversal of trend, lockouts accounting for 28 per cent of total mandays lost. Now the pendulum has swung back. (Table I). In the earlier years, a few states among themselves had accounted for a substantial share of the total manday loss. Apparently, the position remained the same in 1985. West Bengal, Maharashtra, Andhra Pradesh and Tamil Nadu recurrently figure as the first four States accounting for the highest manday losses—67 per cent in 1982, 65 per cent in 1983, 76.4 per cent in 1984 and 71.4 per cent in 1985 (upto July). West Bengal alone accounted for nearly 48.5 per cent of mandays lost in 1982, 46.6 per cent in 1983, 55.5 per cent in 1984 If the loss is greater in these States it should also be noted that most industrial units are concentrated in these States. Sickness among them is widespread. Information on the number of workers employed in sick units is not available, though it is known that 24,045 workers were affected by industrial closures in 1985. Also in naming the four States, it has to be pointed out that the local administration alone could not be blamed for closures or sickness of units.

About 50-55 per cent of the strikes and nearly 20-25 per cent of the lockouts are consequential to disputes over wages and allowances and personnel retrenchment. These could be lessened by long-term agreements with provision for automatic revision. The principal reasons for lockouts are given as indiscipline and violence even if the causes of their origin are lost in controversy.

Loss of production

Loss of production due to strikes and lockouts during 1980-85 shows an irregular trend. Barring the loss of production because of Bombay textile strike, production loss which stood at Rs. 628.76 crore in 1981 steeply fell to Rs. 286.67 crore in 1982. Thereafter, it increased to Rs. 412.39 crore in 1983 but again declined substantially to Rs. 386.65 crore in 1984.

Agitational activities unsettling industrial relations also arise from inter-union attempts at gaining footholds and enlarging their respective following in sensitive industrial belts and vital sectors. Emergence of some unions who, with little regard to established procedures in settling disputes, resort to militant means is a manifestation of this trend.

Sickness

As mentioned earlier, a major source of disruption and the resultant hardship to a large number of the workforce is industrial sickness which is assuming an increasing magnitude. According to one estimate, 90,000 units, most of them in the small scale sector are believed to be sick. These have a total bank credit of over Rs. 3,600 crore. The Reserve Bank of India has reported that as on January 1, 1985 the period upto which the latest provisional information is available, there were 545 large sick units and 1,287 medium units. Sickness is caused by financial stringency, shortage of raw material or power, breakdown of machinery or lack of demand for product. Sometimes, two or more factors combine to cripple the units.

And the cure

To combat sickness the government has since prescribed policy guidelines according to which the banks and financial institutions are required to monitor the situation and take corrective action. The central and State governments provide concessions and reliefs as part of the rehabilitation packages formulated by banks and financial institutions to nurse sick units back to health. The problem and the remedial measures were initially discussed at a meeting the Union Minister of State for Labour had with the representatives of the central trade union organizations early last year. Subsequently, in the 28th session of the Indian Labour Conference (ILC) held in November last emphasis was laid on quick programmes for rehabilitation and revival of sick undertakings. It recommended that a standing committee be set up to monitor the problems and to undertake the in-depth study of individual cases of closed as well as potentially sick units so that effective remedial steps could be taken.

Despite the increasing sickness, the total number of closures shows a steady decline from 349 in 1981 to 286 in 1982, 226 in 1983 and 188 in 1984. The number of workers affected, however, increased from 26,602 in 1982 to 43,234 in 1983, 71,937 in 1984 but dropped to 24,045 in 1985. (ref. Table II).

Consensus and cooperation

The drop in 1985 suggests that the picture is not of unrelieved gloom. Also, a major attempt at infusing a psychology of cooperation instead of confrontation capable of producing a consensus marked industrial relations last year that saw the convening of the ILC after a lapse of fourteen years. The prime condition for the success of any labour policy, aimed at removing the irritants which cause work stoppage, is that it should be based on consensus. This is a concept sanctified by tradition and found pragmatic in the last four decades. It is sought through the tripartite forum representing unions, employers and the government. Efforts in this direction had been pursued since the beginning of last year which coincided with the installation of the new government. The goals were set : productivity at optimal levels, productive employment and industrial peace.

It was made clear by the then Labour Secretary that law will be amended to maintain sanctity of the properly arrived at settlement between the employers and trade unions. The government was anxious to ensure that such agreements were not disturbed. Further, the government wanted as part of labour policy, a machinery for voluntary arbitration, to be utilised by employers and workers. In regard to productivity, the Labour Secretary suggested that employers organisations should examine the concept of bonus and consider whether the existing law had achieved the objective for which it was enacted and whether it could be substituted by an alternative law to help improve productivity. Referring to enforcement of labour laws, in his view, employers organisations should examine whether they could take some responsibility in this respect. These could be vested with appropriate powers, if deemed necessary, to get the laws implemented by their members. Emphasising the importance of introduction of new technology in vocational training, he stated that the private sector could play an effective role in this respect. The employers could set up most modern vocational training centres which could train the youth to match the new requirements of the industry.

To secure consensus in favour of these suggestions a series of discussions was initiated with representatives of unions and employers and among labour secretaries and ministers. This resulted in the ILC sessions. Needless to say, its biggest achievement was

that it ever met and produced a consensus draft. It could have been a non-starter because of disputes over representation.

I.L.C.

Indian Labour Conference is considered the apex of tripartite machinery in which parity is maintained between employers and workers groups. Because of the large number of trade union centres organised in the last 15 years there was a problem of representation to workers' organisations. It was sorted out by the government decision that organisation having verified minimum membership of one lakh as on December 31, 1980, other than those who have membership of more than five lakhs spread over four industries and four states, could also be given some representation on the conference. In accordance with this decision, an organisation having the minimum verified membership of one lakh but less than five lakhs were allocated one delegate each.

The conference arrived at the consensus that the criteria for workers' representation should be left to be decided by the central trade union organisations and, in case of differences, the government may take a decision.

The consensus draft, apart from proposing a standing committee particularly to keep watch on industrial sickness, touched on other aspects of a national labour policy favouring increased workers participation, strengthening of the measures for safety and health of workers and widening the coverage of social security schemes like gratuity, insurance, employment provident fund organisations and Employees State Insurance Corporation. Surprisingly, it skipped making any recommendation on the key point of selecting the collective bargaining agent, a problem that has eluded solution for several years.

The recommendations of the Sanat Mehta committee formulated two years ago were left in the shelf to gather dust. Obviously, the participants could not agree.

That was not all. In retrospect, one would wish the State Ministers had taken the conference much more seriously as it primarily addressed to a subject in their jurisdiction. Most ministers, barring those of Maharastra and West Bengal, were content with reading out their speeches.

In any event, the proof of the success of such a conclave is in its follow-up. Four months after the conference had met, one still awaits signs in that direction finding only that the labour scene remains a mix of hopes and frustrations.

Table I

Percentage distribution of mandays lost due to strikes and lockouts (*1980-85*)

Year	Strikes	Lockouts	Total
1980	54.8	45.2	100.00
1981	57 9	42.1	100.00
1982	32 2	67.8	100.00
1983 (P)	34 5	65.5	100.00
1984 (P)	71.8	28.2	100.00
1985 (P)	35.3	64 7	100.00

P—Provisional

Table II

Number of closures (units) due to reasons other than industrial disputes (*1980-85*), cause-wise

Causes	Number of closures during				
	1980 (P)	1981 (P)	1982 (P)	1983 (P)	1984 (P)
(1)	(2)	(3)	(4)	(5)	(6)
1 Financial stringency	87	79	73	109	92
2 Shortage of raw material	27	15	15	16	19
3 Shortage of power	5	5	3	5	11
4 Breakdown of machinery.	2	1	6	1	—
5 Lack of demands/ accumulation of stock.	24	5	5	9	14
6 Others	191	239	166	79	47
7 Not known	2	4	18	7	5
Total	338 (18,052)	349 (37,377)	286 (26,602)	226 (43,234)	188 (71,937)

(P)—Provisional

Note. Figures in brackets indicate the number of workers affected.

6750 Watersheds in Orissa during Seventh Plan

About 6750 watersheds are proposed to be constructed in Orissa during the Seventh Five Year Plan.

The Union Government allotted Rs. 529.76 lakh during 1983-84 to 1985-86 to the Orissa Government for the purpose. Of this, over Rs. 201 lakh has remained unutilized and will be spent by the Orissa Government by April, 1986.

Water management, a formidable challenge

Dr. Sudhir K. Srivastava

Floods, water-logging, water erosion, brackish ground water, drylands and droughts are some of the major problems facing water management for agriculture in the country. In this article, the author analyses these problems and suggests strategies to meet the challenges posed by them.

THE LOSSES WHICH THE COUNTRY is bearing on account of the poor water management are of staggering dimensions and contribute one of the important threats to our economic progress. The major problems of water management in agriculture and the possible strategies of over-coming the limitations are outlined here.

Flooding

The term flooding usually refers to flat land covered by water, often flowing from higher land further upto the catchment According to the Report of the National Commission of Flood (1980) about 40 million hectares are subjected to periodic floods. During 1983, the total damage in the country due to heavy rain|flood and cyclones as assessed and reported by the State Governments was of the order of Rs. 25081.08 million. The only solution to overcome such losses are large scale irrigation projects which in fact are accused of being instrumental to a number of environmental hazards such as increase in water logged and saline lands, sedimentation in reservoirs, damage to forest areas, breeding of mosquitoes, depleting the fish population, large scale growth of acquatic plant of nuisance value, displacing wild life from reservoir area, degradation of valuable land scape, etc.

After the soil is fully saturated with water, the excess water flows over the surface as run off and carry away the soil particles. It has been estimated that each millimetre of cultivated soil lost could cost 10 Kg. of total nitrogen and 2 Kg. of total phosphorous per hectare. In a study made in 1972, it was estimated that on an average, India was loosing about 6000 million tonnes of top soil per annum through water erosion.

Enough vegetation to reduce both the impact of rain drops and the water flow can reduce water erosion. The late Prime Minister Mrs. Indira Gandhi in her address to the 15th FAO Regional Conference for Asia and the Pacific on March 5, 1980 stressed the need of activating Land Use Boards which were set up by 26 States and Union Territories in order to protect the integrity of our soil endowments and enhance their productivity through scientific land and water use practices.

Water logging

A soil is water logged when it is completely saturated with water which is caused by water stagnation of flat land and low lying depression due to excess rainfall, flooding by rivers, seepage from canals, high water table, obstruction to natural drainage, over irrigation by farmer, etc. Ponding of water on the soil surface beyond limited time damage most of the crops For example, it has been shown that sub-mergence beyond one day reduced the yield of arhar by 30 per cent while 5 day sub-mergence reduced the yield by 60 per cent. In most of the low lying or high water table areas, wet conditions persist upto December which results in delayed unproductive sowing or no crop production. Another harmful effect of water logging is that when stagnating water dries, considerable salts accumulate

on the soil surface, leading to development of salinity. According to National Agricultural Commission 1976, 6 million hectare is affected by water logging, out of which 3.4 million hectare is affected by flooding and rest 2.6 million hectare is by high water table.

Water logging is second only to erosion as a threat to both soil and crop. It is, therefore, essential that studies on water table fluctuation, ground water recharge assessment of seepage loss from canals, tanks etc. are undertaken on watershed basis and parameters like Critical Water Table Depth, Falling Water Table, Critical Sub-mergence, Drainage Co-efficient, etc. are worked out for different crops so that location specific strategy is chalked out for providing adequate surface and sub-surface drainage along with suitable cultural practices.

Brackish ground water

Mostly ground water of arid and semi-arid regions of parts of Punjab, Haryana, Uttar Pradesh, Rajasthan and Gujarat contain very high proportion of sodium and bicarbonate and is called brackish ground water. These waters are deceptively sweet in taste and are dangerous for irrigation purpose. Continuous use of such water results in the precipitation of soil calcium and magnesium as carbonate and thus leads to soil sodiumization (alkalization). Such soils are very hard when dry and very poorly permeable to water when irrigated. The bad effect of such water is quickly discernible on heavy textured, poorly permeable and ill-drained soil as compared to light textured, well drained and deep water table seated soils. However, in case of later also, the problem has been assuming alarming proportion due to introduction of canal irrigation where water table is arising at an alarming rate of 40—80cm per year.

In areas having no natural drainage the conjuctive use of both canal and ground water coupled with high irrigation efficiency, adequate use of gypsum, planting of salt resistant crops and adoption of special method of planting to keep the low salt accumulation near the root zone are some of the possible solutions.

In areas where drainage is possible, the brackish water acquifers can be evacuated by pumping Later on irrigation with good quality canal water will result in recharging the acquifers with good quality ground water which can be recycled for irrigation purpose so as to maintain water table at desirable depth.

In areas having no natural drainage outlet, brackish water fish culture may be another alternative to use brackish ground water.

Management of monsoon rain is also a problem in sodic soils. As the rain water does not penetrate deep into the soil it leads to water logging condition in a short period at the onset of rain followed by near drought condition if in between rains there is a long dry spell. To overcome this and to conserve the excellent quality rainfall, system of water management should involve rain water storage in crop land, shallow dug out ponds and provision of surface drains

Drylands

The dryland, rainfed or unirrigated area comprises that 40 million hectare where annual rainfall is below 750 mm and is deprived of conventional irrigation facilities. In these areas water is a limiting factor during the crop season with the further complications in the years of drought

Dryland farming technology calls for productive, utilisation of atmospheric precipitant on naturally reaching a given area. The practice include the harvesting of rainfall run off within its catchment, their storage in tanks and ponds and use in crop life saving irrigation coupled with decreasing the agricultural unproductive loss of moisture, namely evaporation, consumption of water by weeds, and all types of sub-surface drainage and other improved agronomic practices.

It has been estimated that if new dryland farming technology developed by ICRISAT (International Crop Research Institute for Semi Arid Tropics) and AICRPDA (All India Coordinated Project for Dryland Agriculture) is extended to all such areas, it would result in spurt of 36 million tonnes in the country's food grain output, including an additional 10 to 12 million tonnes of pulses and oilseeds.

Drought

There are large areas where inspite of rainfall exceeding 750 mm water for crop production can still be a limiting factor. This is due to uneven and erratic distribution of rainfall, high climatic demands of evapotranspiration, lack of water conservation measures and soil properties India's food grain production during years 1972-73 and 1973-74 was badly hit by drought It was followed by an unprecedented drought of 1979 which affected 38 million hectares of crops and an estimated 220 million persons and 123 million cattle head in 97 districts of 11 States.

Various strategy to overcome such situation are·

(i) Development of additional surface water resources :

This may include development of minor irrigation potential by diverting a part of the flows of the numerous hill side and streams, direct pumping from streams, rivers and open water bodies, and timely repair, cleaning and improvement in designs numerous tanks and ponds and proper regulation of water available in them.

(ii) Increased utilisation of ground water resources:

This may include bringing into use the unused irrigation wells, increased pumping from under-utilised wells and tapping the under-utilised ground water potential.

(iii) Conservation of water on the farm:

This may include practices like run off control through cultural practices like contour farming, strip cropping and conservation village, reducing seepage and water conveyance loss by proper lining of irrigation channels, use of adequate water flow control devices, reducing evaporation of water stored in tanks by covering the reservoir with mono-molecular of fatty alcohol compounds, and selection of proper irrigation method taking into consideration factors like topography, soil type, crops to be taken, source of water supply and eocnomic consideration.

(iv) Efficient distribution of canal water:

The canal water distribution occasionally poses a great problem because of heavy irrigation application due to uncertainty of canal water availability for next irrigation and the deliberate breaches by the farmer. Both factors lead to wastage of water resulting in inadequate water supply to tail-enders. Considerable progress has been made in some states by following system of canal water distribution like warabandi or osrabandi, block or shejpali, etc. and needs to be further improved.

(v) Irrigation scheduling according to requirement of crops:

Water requirement of crop is expressed in terms of Evapotranspiration (ET). ET is the sum of water transpired by the crop and the water lost by evaporation from the surrounding during a specified time. ET varies from crop to crop. For example, to harvest a good crop of wheat at Pantnagar about 40 cm (depth) of water is used as ET. If this water is evenly distributed to all the critical growth stages of wheat, ie., Crown Root Lnitiation (CRI), Tillering, (T) Late Jointing (LJ), Flowering (F), Milking (M) and Dough (D), Yield will be bumper, if other factors remain optimum. However, if there is uneven distribution of water i.e. over irrigation at certain growth stage and under irrigation at other, yield will be adversely affected. Over irrigation leads to formation of toxic gases, poor nutrient availability, increased pest and disease outbreak, salt accumulation and loss of water through percolation. In rice crop, where 45 per cent of the country's irrigation water is diverted, the conventional flooded rice cultivation results in a loss of about 60 per cent through deep percolation. It has been demonstrated that irrigating the paddy field after three days of subsidence of ponded water does not affect the yiled and results in about 30 per cent saving of water.

ET demands of crops are met both by natural sources like rainfall, soil water storage and water table, and artificial source which is irrigation water. Our objective should be to meet as far as possible ET demand of crop with the help of natural resources and use minimum level of irrigation. For example rainfall pattern at Pantnagar in the past years has shown that if wheat planting is done during the end of November, to first week of December, water requirement of LJ stage is met by rain water. Water table also contributes substantially the water requirement during critical stages. Under Nainital Tarai conditions of Uttar Pradesh it is recommended that, for wheat one irrigation at CRI, two irrigations each at CRI and F and three irrigations each at CRI, LJ and M stages are sufficient for optimum yield in areas where water table depth is 40—100 cm, 80--150 cm and 140—200 cm, respectively.

The knowledge of interval between two irrigations as determined by crop requirement and availability of natural water enable to schedule irrigation. Most of the farmers are not aware of this concept. Actual practice of the cultivator is based on his own understanding of soil moisture level and crop water requirement. There is a dire need of starting Irrigation Scheduling Service in which a farmer gets complete information pertaining to irrigation methods, its design, drainage measures and irrigation schedules based on rainfall pattern and soil hydrological properties for his entire farm. □

Increased production of janata cloth by handloom sector

The production of Janata Cloth by handloom sector during 1985-86 (upto December 31, 1985) is provisionally estimated at 200 million square metres as against the target of 420 million square metres for the entire year. The increase in production in 1985-86 (upto December 31, 1985) as compared to the corresponding period of 1984-85 is about 60 million square metres.

The pace of transfer of production of Janata Cloth to the handloom sector has been speeded up and it is expected that by the end of the Seventh Five Year Plan, the entire target of 700 million square metres will be transferred to the handloom sector. □

Indian medicinal herbs growing popular abroad

Indian medicinal herbs are becoming popular in foreign countries. This is evident from the increasing export of these herbs. During 1984-85 herbs worth Rs. 79.17 crores were exported, representing almost two-fold increase over their exports valued at Rs. 43.87 crores during 1983-84.

The main importers of Indian medicinal herbs include U.S.A., Canada, West Germany, Belgium Italy, France, Netherlands, Denmark, Spain, USSR Czechoslovakia, Japan and Singapore.

Why a national policy for water management?

Dr. M. Aslam Parvaiz

India has about 67 million hectare metres of surface water and 36.5 million hectare metres of ground water. But, according to the author, there is natural and man-made imbalances in these two water resources which call for a national policy for their exploitation. He says, water resources management is so important a matter that it cannot be left to the States alone in view of the inter-State squabbles over use of surface water and their failure to meet the challenge.

THE FOURTH ANNUAL MEETING of the National Water Development Agency was held earlier this year in New Delhi to take stock of the workflow to be done by the Agency during the Seventh Plan. The National Water Development Agency was set up in 1982 to give shape to the outline of National Perspective for water resources development. It is designed to work for the optimal utilisation of water resources. Traditionally there has been a strong linkage between land and water. Whereas the policy towards land has been well laid and planned year after year, the policy for water still waits for a similar approach. However, unlike land the availability of water is not a fixed factor. It varies from place to place depending upon season and geo-climatic position of the region. Its distribution is a recurring process and hence there is an urgent need for devising foolproof policies to ensure equitable distribution.

Where does it come from ?

India is endowed with substantial water resources, the utilisable amount of which is being placed at million hectare metres for surface water and 26.5 million hectare metres for ground water. This important resource, like other natural resources, is an integral part of the biosphere, and both surface and ground water are important cooperators of hydrological cycle which in turn is controlled by soil and vegetation. To fully appreciate this delicate link it will be worthy to trace the origin of water on this planet. Water comes primarily on the earth through rain, snow, dew and hail. Whether it is rain water, snow or other forms of precipitation, water following a path of least resistance filters down through cracks in rocks or through porous soil till it reaches an impervious rock layer where it eventually gets stored in huge natural tank-like spaces called aquifiers. If this ground water does not emerge naturally or is not pumped out, the so formed water table in the area goes on rising as long as water percolation continues. The percolation of water, however, depends on the vegetation status of soil. If the soil has green cover the water will stay there for longer duration and hence more of it will be able to percolate down the soil layers but if land is barren, the run-off rate will be more and most of water will find its way into natural water bodies like lakes and rivers, which are thus not only loaded with silt coming down with this water as a result of soil erosion but are also made to swell beyond their limits, causing floods. Besides facilitating greater absorption of water, vegetation plays another important role in natural hydrological cycle. Deeply penetrating roots of trees absorb water from ground sources and through their leaves release it into atmosphere where it accumulates ultimately forming clouds resulting in rains and this way the cycle is completed. If seen in this perspective, deforestation means disruption of natural water cycle. The environmental disturbances have created such a situation that we have to live with both floods as well as drought. More than a tenth of our total area is prone to floods that are becoming furious year after year. While the economic loss wrecked by floods has been increasing by about five per cent annually and is now running at over 1500 crore rupees, drought last year alone affected about 100 million people in nine States. At present the Government is incurring an expenditure of about Rs. 200 crore annually

towards drought relief. While excess water is a problem in one part of the country, depletion and scarcity of water resources is a problem in others. But the two problems are in fact inter-related. While deforestation was done to create reservoirs, the same deforestation has depleted the ground water resources in most of such localities.

How is it put to use ?

At the moment we face problems with respect to both types of water resources. Ground water which forms more than 97 per cent of fresh water on earth is partially tapped in States like Assam, Bihar, Madhya Pradesh, Orissa and West Bengal where present level of ground water utilisation ranges from 35 per cent in Bihar to as low as only 5.4 per cent in Assam. The quantum of water and its flow in rivers, which are the most important source of surface water, depends on their geological-*cum*-geographical position. While some parts of country have surplus of surface water others go abegging The Prime Minister Shri Rajiv Gandhi, while inaugurating the National Water Resources Council in October last year, had put it rightly, "It is ridiculous to allow water going waste while some states go dry". These natural and man-made imbalances in ground as well as surface water resources call for a national water use policy. For equal distribution of surface water a national water grid seems the only answer so that the surplus water of different basins could be used to augment supplies to the deficit areas. The concept of a National Water Grid envisaging Ganga-Cauvery link was put forward in early seventies. In 1976, the Government set up a Technical Committee to examine the feasibility of east-ward diversion of the west-flowing rivers of Kerala and Karnataka, to Tamil Nadu and drought-prone areas of Karnataka. However, despite the formulation of such viable schemes, interstate squabbles continue to daunt efforts aimed at fuller utilisation and exploitation of this crucial resource. It is in this backdrop that the role of National Water Development Agency assumes greater significance. Water resource management is so important a matter that it cannot be left to states alone, particularly when most of them have failed to meet the challenge. Interstate water disputes have already delayed the exploitation of the immense potential of many rivers including Godavari, Narmada, Krishna and Mahananda. The situation is further aggravate dby the fact that states consider water management as their own local affair and have been hesitant to see it in national perspective.

Need for a national policy

While formulating and executing a national policy for exploiting water resources, government will do well to be more vigilant about the management of resources at hand. Industries should be asked to recycle their effluents. It will not only reduce pollution but will also reduce their demand for fresh water. While planning the cropping pattern for various agro-climatic regions, consideration should be given to the water status of the region. A shift in the cropping pattern without considering the water resources can dangerously aggravate the situation. For instance, in Tasgaon Taluka of Maharashtra, a shift from rain-fed coarse grains to irrigated cash crops resulted in overdraft of ground water thereby receding the water table to a depth of more than 60 metres. At present no one can strike water even to depths of 200 metres. Efficient management of irrigation schemes and adoption of modern techniques will also help improve the situation. Drip irrigation, also known as trickle irrigation, is one of the latest and efficacious methods of irrigation. It involves frequent application of water in small doses, directly to the roots. Water is released to a network of pipes at low pressure and at just a sufficient rate to replenish used moisture in soil. The Central and State Governments, research organisations, banks and manufacturers of drip irrigation material should make concerted efforts to popularise this novel technique among farmers. The reduction in levies on the equipment and provision of liberal subsidies by the Government will further motivate the farmers to adopt this new system. Water supply to household sector also needs more careful management. According to the surveys conducted by the National Environmental Engineering Research Institute, the per capita drinking water losses in different cities in the country range between 11,000 litres and 31,000 litres annually. This indicates a waste level of 20 to 35 per cent of the total flow of water in the distributing system, primarily due to leaks in mains and house service pipes. Creation of separate cells in water works department for the preventive maintenance programme will substantially reduce wastage. Besides, people should also be educated about the efficient and economic use of water as more than sixty per cent of water supplied to household sector is washed out into sewers. And finally this sewage water must be recycled till it becomes too polluted. Under existing conditions and facilities this recycled water may not be fit for human consumption but can cater well to the needs of agricultural and industrial sector

The examples of wastage or inefficient utilisation of water resources are still more. In sharp contrast to our fears of an approaching water crisis, an FAO report says that our land and water resources are capable of sustaining a population of 2 6 billion people provided they are properly managed. Government will therefore do well to lay more stress on management of this vital resource.

(Courtesy : Spotlight, AIR)

New strategy for integrated water management

(Nagarjunasagar model)

P. Sitapati

Scientific management of canal and river water has become crucial in view of the colossal waste of water in irrigation projects. A novel Pilot Scheme of integrated water management has been started in Nagarjunasagar Project in Andhra Pradesh with the World Bank assistance. The author here gives details of the scheme and feels that it may become a pace-setter for the country.

IN WATER MANAGEMENT. Command Area Development Authorities have so far limited themselves in the country, by and large, to distribution of water below the pipe outlet only. The general view has also been that Command Area Development personnel have pointed responsibility only below the pipe outlet as they have no jurisdiction or responsibility in the distribution of water above the outlet, i.e. in the canals, branch canals, majors, etc Commonsense would, however, clearly indicat ethat there should be integrated water management especially when there is colossal wastage of water in irrigation projects. It is, therefore, indispensable that scientific water management should necessarily encompass systematic canal operation above the pipe outlet also

Strategy in Andhra Pradesh

Integrated water management involves systematic canal operation in the canal system above the pipe outlet and rotational water supply below the pipe outlet as per requirements Rotational water system is also made above the pipe zonewise or as required to ensure that water required is pushed from th canals|branches to the tail-end areas of the irrigatio system.

The importance of integrated water managemen which involves systematic canal operation and Wara bandi or rotational water supply has been adequatel demonstrated in Andhra Pradesh with a novel Pil Scheme on integrated water management in Naga junasagar Project which was operated with Worl Bank assistance in the year 1984-85 and continued i 1985-86 also. A Special Cell was created in the Secre tariat with a Chief Engineer, Integrated Wate Management, with supporting Specialists assisting hi in the programme of water management planned fo and organised by the Commissioner, CAD Th strategy for the Pilot Project on Integrated Wate Management and Higher Productivity consists of th following components :

—Systematic Canal Operation by properly schedul ing deliveries of water so that all lands including tail end lands get adequate water. Detailed plans ar prepared for this.

—Rotational Water Supply or Warabandi to ensur that all individual holdings of farmers get water earl in time for the crops raised as per plan.

—Early releases of water into the irrigation syster are planned for. This also ensures that agricultura productivity is increased, as late releases of water ir the Kharif and late transplanting have depressed productivity of crops as per observations made in the field. For the first time in the history of Nagarjunasagar Project, Water was also released into the canals on 1st of June for the Kharif crops. Scientific wate management is kept as one objective in the scheme.

—Selection and propagation of short and medium duration varieties of seeds, with a view to maximise production and productivity of the crops.

—Adoption of a package of agricultural practices with High Yielding variety seed, fertiliser, plant protection measures, etc., to maximise agricultural production and productivity.

—All other coordinated measures by the departments concerned, ensuring sufficient credit, marketing of produce, etc.

—Effective monitoring at state and field levels, crop cutting experiments are undertaken to record the yields of crops.

How implemented

The Project on Integrated Water Management and Higher Productivity for Nagarjunasagar, following the strategy indicated above, was implemented in Nagarjunasagar Right and Left Canal Command Areas during the Kharif 1984-85. The area under Nagarjunasagar Right Canal where this scheme was implemented covered 58,405 hectares in Blocks 1 to 6 covering 14 major distributories of water. **Water was released early for the blocks for the first time in the history of Nagarjunasagar Project very early on the 1st of June itself.** A detailed plan for release of water into various majors was also made and systematic canal operation was planned for systematically. Community nurseries were also planned for and wide publicity given for dates of canal opening and closure through several media like TV, Radio and tom-tom in the villages and by distribution of pamphlets among the farmers. The transplantation period was also similarly scheduled. Repairs and improvements to the distribution system was also planned for and undertaken. The Water and Land Management Training and Research Institute conducted classes to the staff under the programme from the highest officials to the lowest officials at the cutting-edge local contract levels including lascars. The Agricultural official of the CADA planned for and provided for various inputs requirements like short-duration or medium duration seeds, fertilisers and pesticides as per the detailed plan worked out by the Commissioner. These inputs were made available village-wise in command areas by the CAD officials.

Farmers also were trained in the Farmers' Training Centres and motivated to take up early sowing and transplantation of short and medium duration varieties for efficient water-use management, higher production and productivity. The credit and cooperative sector officials of the CAD also prepared the plan to ensure that sufficient credit was available.

A Monitoring Wing was set up at the Secretariat level with a Chief Engineer and supporting staff to assist the Principal Secretary, who as Commissioner operates the entire programme.

Block-wise and major-wise the operational plan provided for the date and time of opening the main canal, the date and time of opening the major, the date and time of opening the field channels, a plan for raising the community nurseries, fixing the dates of release of water for transplantation, accurate scheduling of the release of water required as per status-quo designed and a discharge of water possible in the canals and major, and planning for the date of completion of the transplantation. The water discharge proposed to the Ayacut under each major was also planned in detail upto the farmers' holdings, keeping in view the water requirements of the crops. Assistance was continued in the various sections until the harvesting of the crop, monitoring was done at Headquarters and field levels to meet situations and decisions taken on the spot.

Similarly, there was a plan for release of water for 41,228 hectares in blocks 1 to 6 of the N. S. Project Left Canal Command Area during Kharif 1984-85. Programmes were drawn up for water management under 26 majors and plans drawn up both at the Commissioner's level as well as field level to ensure that the scheme was put into operation effectively.

There were difficulties by way of unanticipated breaches of the canal in the Nagarjunasagar Right as well as Left Canals, during the Kharif season which would have resulted in the entire area or a substantial area being kept fallow but for a contingent plan devised which planned for zonal distribution of water and systematic canal operation to see that the damage to the standing crops was limited. A detailed research bulletin is separately being published on this scheme. However, preliminary data have shown that the integrated water management and high productivity scheme has been an effective strategy which could be followed by CADAs all over India for integrated scientific water management and higher productivity.

Productivity levels

In respect of paddy, there was increase in yield by 539 kilos per hectare as a result of the operation of the scheme in Nagarjunasagar Project Right Command Area. While the yield in 1983 Kharif in this area was 4376 kilos per hectare the yield in 1985 Kharif went upto 4,915 kilos per hectare which is a statistically significant increase. Similarly for cotton while the yield was 25.88 quintals per hectare in 1983-84 in this area, the yield in 1984-85 could be sustained at 25.31 quintals per hectare in spite of damage to crops as a result of breaches, etc. The average yield of cotton per hectare in other areas of Nagarjunasagar Right Canal CADA where there was no water management scheme came down to 17.2 quintals per hectare in 1984-85, due to cotton sowing

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Soil conservation in watershed management

Dr. Suraj Bhan

About 260 million hectare of land is affected by drought and 40 million by serious floods in the country every year. Hence need for conservation and efficient management of soil and water for sustained and increased agricultural production. The proper management of watersheds would help achieve increased productivity by proper land use and suitable cropping pattern. The author here makes an appraisal of the irrigation and water management programmes undertaken under the Five Year Plans with physical achievements.

OURS IS THE SEVENTH LARGEST and second most populous country in the World. About 70 per cent of our population is in the rural areas and majority of them have taken agriculture as their profession for livelihood. The forty per cent of our Gross National Product is contributed by agriculture sector. Out of the total area under crops seventy per cent is under foodgrains.

Land and water are two important natural resources which form the basis for all agricultural productions. Land is the non-renewable limited resource at our disposal. The soil is not an inert mass but it is the living body with assemblage of minerals and organic matters. All lands are not suitable for cultivation. The land should be used according to its capability. If this is not done, the balance of inherent nutrients and organic matter in the soil is impaired and the process of degradation starts which may be seen in the form of erosion, waterlogging, alkalinity, salinity, etc. If the process of degradation is unchecked the agricultural production is badly affected thereby eroding the economy of the region as a whole.

Alike land, water is essential for life on earth However, because of the improper distribution and variable nature of rainfall received during the year, our country is known to have frequent floods and droughts, often at the same time in the different parts of the country. Out of the total geographical area, about 260 m ha. and about 40 m ha. are estimated to be effected by serious droughts and floods. Besides this because of large scale degradation and consequent erosion the river courses are silted up thereby causing floods and valuable storage in the Multipurpose Reservoirs are lost due to siltation which account for losses of production.

As such, it is imperative that for sustained and increased agricultural production, the most vital resources, viz. the soil and water are conserved, developed and managed efficiently.

Land degradation

A variety of degradation problems are affecting the basic productive resource of land, the soil and water. Out of the total geographical area in our country about 175 million hectares suffer from various soil erosion and land degradation problems. The tentative break-up of the same is as follows :

		m.ha.
1.	Area subjected to serious wind and water erosion	150 00
2.	Shifting cultivation	3 00
3.	Waterlogged Area	6.00
4.	Saline Soils	4 50
5.	Alkaline Soils	2.50
6.	'Diara' land	2.40
7.	Waste land needing reclamation	6 60
	Total	175 00

Floods and droughts

An overall area of about 40 m.ha. gets affected by floods in our country. Annually an area of about 12 m.ha. which includes 5.5 m.ha. of the cropped area is affected due to floods. About 70 per cent of the total cropped area is under rainfed conditions, which contributes to the 40 per cent of our total flood productions. Irrespective of the quantum of rainfall these areas are beset with water stress conditions. Taking crop performance and climate as an indicator it is estimated that about 260 m.ha., accounting for 70 per cent of the total geographical area, suffers from drought conditions of varying degrees.

Watershed management

Rain is the source of all waters on the earth. Before the rainwater reaches the earth surface, a portion is evaporated, a portion is intercepted by trees, plants etc. From the portion received on the land, a portion is retained as depression storage, a portion is infiltrated and the remaining part of the rainfall flows as surface run off through drainage system into the sea. Each of the River systems has separate drainage units characterised by different combination of physiography, soil, geology, climate and land use patterns. The attributes controlling the water resources influence availability, degradation, erosion and sediment problems confronting the drainage area. In order to tackle the problems of water resources and various forms of degradation and to develop these resources for sustained and increased productivity in the region, it is essential to confine our activity to natural drainage unit called the Watershed. The efficient management of a watershed implies that the water yield confined to the drainage is maintained unimpaired so as to derive optimum benefits and sustained productivity by proper land—use and suitable cropping patterns in the area. The various conservation and crop management practices should be such that loss of soil as well as moisture is minimum. The soil and water conservation in the watershed has twin objectives : (a) to conserve these resources in the upper catchments by providing optimum vegetative cover for in *situ* protection of soil erosion and to prevent the siltation of river channels, and the reservoirs thereby preventing the flood and loss of live storage in the reservoirs ; (b) in case of cultivated areas, problems confine to different types of conservation measures, their efficacy, agronomic practices, economics and other aspects.

Components

The various components of the soil and water conservation measures undertaken as a part of the comprehensive watershed management could be categorised as under :

(1) Engineering Measures.

(2) Agronomy Measures.

(3) Afforestation.

(1) **Engineering Measures** : The various Engineering Measures include land levelling, shaping, contour bunding,terracing, general grading of the land with proper drainage, bank protection, rivetment, check dams, gully plugging, drops, sedimentation dams, etc.

(2) **Agronomic Measures** : They include protection by vegetation including grass cover, pasture development, contour farming, strip cropping crop rotations, etc.

(3) **Afforestation** : These include the forest conservancy, control on over-grazing, fire protection, development and protection of forest plants etc.

Developmental programme

Recognising the serious problems of land degradation Central Soil Conservation Board with a grid of Research Training and Demonstration Centres in representative problem areas were set up right in the First Five Year Plan. The aim was to help in developing various package of practices and in building up professionally competent personnel to implement the developmental schemes. At the Union Ministry of Agriculture, a Division with multi-disciplinary expertise was also established to provide coordinated direction in this field.

Training

In the Second Five Year Plan, the research and training programmes were enlarged by opening a new Centre at Chatra (Nepal) particularly for the serious problems of Kosi catchment lying both in Nepal and India. All-India Soil & Land Use Survey Organisation (AIS&LUS) was established as a subordinate organisation of the Ministry of Agriculture for providing catchment characteristics to identify priority and responsive areas. Dry farming demonstrations were launched in all the States and Union Territories during this period, while the first Model Bill on Soil Conservation was circulated with a request to the States for enacting suitable legislation.

Soil-conservation

Considerable expansion of the programme took place during the Third Five Year Plan with the launching of a Centrally-sponsored scheme of Soil Conservation in the catchments of 13 River Valley Projects. A programme was also launched during this period to survey and categorise waste-lands in blocks of less than 100 ha. in 17 States for resettlement of landless labourers on reclaimed watersheds. Surveys were also conducted in four States for categorisation of ravine lands and their ownership patterns.

Reclamation

In the period 1966—69, the scheme of Survey and Categorisation of Waste lands was transferred to the

State Sector. However, a Central Ravine Reclamation Board was established and a National Policy was adopted for stabilising, developing and reclaiming ravinous areas with integrated management plans on the basis of ravine watersheds. The Training and Research Centres, which were established in the First Five Year Plan, were transferred to the Indian Council of Agricultural Research except those at Chatra and Damodar Valley Corporation (DVC) Hazaribagh. The All-India Soil and Land Use Survey (AIS&LUS) also got bifurcated between the Department of Agriculture & Cooperation and I.C.A.R. A Resources Inventory Centre of this Division was started.

Integrated approach

In the Fourth Five Year Plan the concept of integrated approach and programme planning on the basis of watershed and micro watersheds was advocated for all soil and moisture conservation programmes. Data collection centres were established to obtain hydrologic and sediment data in respect of small watersheds and tributories of the catchments covered under the Centrally sponsored Scheme of Soil Conservation in the catchments of River Valley Projects. Specific assistance was provided to the States to develop infrastructures within the implementing Departments and get the personnel engaged trained both in watershed management planning and collection of hydrologic and sedimentation data. The Resources Inventory Centre was merged with the All-India Soil and Land Use Survey. A Central sector scheme of the ravine reclamation was launched in four States of Gujarat, Madhya Pradesh, Rajasthan and Uttar Pradesh to test the technical feasibility of the national policy and the approach for developing ravines.

Watershed concept

During the Fifth Five Year Plan, watershed approach got wider acceptance and included more diversified programmes. The pilot projects of amendments of alkali and acid soils in compact Areas, control of shifting cultivation and the scheme for strengthening and creation of State Soil Land Use Survey Organisation opened three more centres in addition to four Regional Centres and also took up collaborated programmes with Indian Space Research Organisation (ISRO), National Remote Sensing Agency (NRSA) and FAO|UNDP for application of remote sensing technology in soil and land use surveys and for planning of soil conservation programmes. Awareness was created to develop, conserve and manage land in the wider perspective taking into account the competitive demands from various sectors. It was, therefore, considered necessary to have some high level forum where all matters related to soil and land resources could be discussed in its totality to evolve new basis for formulating programmes for developing and utilising land and soil resource base.

Saving land resources

During this period serious concern about the widespread degradation of inelastic land resources and improper management of the same drew attention of the policy makers. At the instance of the Prime Minister, the Ministry of Agriculture urged the State Governments to set up State Land Use Boards under the Chairmanship of Chief Minister, to take up an overall view about the natural resource, its utilisation and to ensure that degradation of the same is checked. As a result, all States and six UTs established State Land Use Boards or some alternative body to initiate action to safeguard soil and land resource base. Organisational capabilities and other infrastructure were further strengthened in most of the States. At the same time, action was initiated to establish a National Commission to take care of these aspects for the country as a whole.

More central assistance

During the Sixth Five Year Plan, programmes which were in operation in the Fifth Five Year Plan, were continued either in the Central Sector or State Sector. Central assistance was provided for launching the important national programme, i.e., Integrated Watershed Management in the Catchment of Floodprone Rivers. The All-India Soil & Land Use Survey Organisation extended its collaboration with National Remote Sensing Agency (NRSA) and Indian Space Research Organisation. A Remote Sensing Centre was established within the organisation with FAO| UNDP support and in consultation with the Department of Space. The organisation was also actively involved in developing National Natural Resource Management System (NNRMS). To provide a forum at the national level and to deliberate on issues such as care and scientific management of land, a two-tier body, namely, National Land Resources Conservation and Development Commission and National Land Board was established in 1983. During the Sixth Plan, a National Policy has been adopted to use watersheds of varying sizes for development of land and water resources for conservation as well as production schemes in rainfed|dry land areas. The organisational structure of the State and the Centre have been reviewed and provided with facilities for acquiring necessary expertise in the subject. The country also went ahead with sharing the experience of identification of priority watersheds, planning and implementing watershed managements plans with developing countries for which a proposal under Technical Co-operation amongst developing countries (TCDC) has been approved and forwarded for consideration to the developing countries. To provide some horizontal expansion to various land management practices, a programme has been undertaken under the Prime Minister's productivity year to restore some of fallow lands other than current fallows to productive land management such as cultivation, raising plantations of

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Drinking water for rural masses

Jag Mohan Mathur

As a result of concerted efforts under the Sixth Five Year Plan and the revised 20-Point Programme we could provide at least one assured source of safe drinking water to as much as 83 per cent of the 2.31 lakh problem villages. Allout efforts will be made during the Seventh Plan to cover the remaining 17 per cent of them. A conference of the States' Ministers in-charge of rural water supply was held recently in New Delhi to chalk out a strategy in this regard. The author feels though the target of covering the entire rural population by the end of the Seventh Plan is not an easy task, we can certainly make determined and concerted efforts to reach the goal.

WATER IS A BASIC NECESSITY for every one, but unfortunately many of our 5.76 lakh villages have been facing scarcity conditions for years. In places like Rajasthan, people have to wait for hours to collect one pitcher of water from the water tanker brought by the train. In hilly areas also the plight is the same. In many tribal and backward areas unhygienic water collected during the rainy season is the only source of drinking water. Thus, the provision of drinking water is one of the basic needs of our villages. But during the initial period of our national planning, this aspect did not receive enough priority. A national water supply programme was taken up as early as 1954, but allocations made for this were too meagre. Until the end of the Fourth Five Year Plan, i.e., 1974, total investment made by the Central and State Governments for providing water supply and sanitation facilities was only Rs. 855 crore. Of this, 65 per cent went to the Urban areas.

During the Fifth Five Year Plan it was realised that no improvement in the living standard of the people could be brought about without providing safe drinking water and sanitation. From this Plan Rural Water Supply became the part of minimum needs programme. During the Plan period more than Rs. 381 crore were spent on rural water supply.

Luckily when Sixth Five Year Plan was launched there was increasing awareness, both nationally and internationally, of the importance of safe drinking water supply. The drought of 1979-80 which was accompanied by an acute shortage of drinking water in many parts of the country added urgency to the search for a lasting solution. At international level, the United Nations Water Conference called for a ten year campaign to provide access to safe drinking water and sanitation to all people and the decade beginning from 1981 was designated as the International Drinking Water Supply and Sanitation Decade.

One of the main hurdles in tackling the problem was the absence of comprehensive data. During Third Plan period, under a Central Scheme special investigation divisions were set up to assess the water supply situation, especially in the drought-prone areas. The data collected in 1964-65 indicated that about one-third of rural population required special efforts to provide them with safe drinking water facility. A survey conducted in 1971-72 identified 1.52 lakh villages without a safe or assured source of drinking water. According to the latest data available there were 2.31 lakh villages in the country

requiring drinking water facility on a priority basis. The villages which did not have assured source of drinking water within a distance of 1.6 km. or at the depth of 15 metres were termed as 'Problem Villages'. Those villages where the water sources have too much salt, iron and fluoride, etc., or those villages which are vulnerable to water borne diseases, were also included in the same category.

The Sixth Plan provided more than Rs. 2,000 crore for the problem. It was considerably higher than the outlay of about Rs. 480 crore in the Fifth Plan. Of the outlay of Rs. 2000 crore Rs. 1400 crore were in the State sector under minimum need programme and Rs. 600 crore under Centrally sponsored accelerated rural water programme. This programme also received very high priority in the new 20-Point Programme and an investment of Rs. 2485 crore, which was more than the original Sixth Plan allocation, was possible on provision of drinking water supply in the villages. The Centre also provided assistance in the form of drilling rigs, handpumps, etc. The result of all these combined efforts was that by the end of Sixth Plan we were able to provide at least one assured source of drinking water to 1.92 lakh villages. This was out of 2.31 lakh villages which were termed as problem villages. Besides this, 47,000 other villages were also covered. This was really an impressive achievement.

If we look at the Statewise figures, we find that Tamil Nadu covered all the 6645 villages during the Sixth Plan period. Karnataka covered all but thirteen of 15,456 problem villages. In Kerala, out of 1158 problem villages, only sixteen have been left out. Andhra Pradesh has also done well by covering about 8,100 villages out of 8,200. In Madhya Pradesh, there were twenty-five thousand problem villages. It covered all but 1,000 villages. Uttar Pradesh had the largest number of problem villages, exceeding 28,500. After the Sixth Plan, only 1360 are left to be covered.

Mere figures cannot describe the change which has taken place in the life of the rural people which have now drinking water facility. It will not be an exaggeration to say that easy availability of safe drinking water has brought happiness in their life.

Recently, in a Conference held in New Delhi, the performance during the Sixth Plan was reviewed and strategy for the Seventh Plan was chalked out. The Conference, which was attended by the State Ministers, Secretaries and Chief Engineers Incharge of Rural Water Supply, decided to make an allout effort to provide adequate and safe drinking water to the entire rural population of the country. In the Seventh Plan highest priority would be given to cover the hard-core thirty-nine thousand problem villages which could not be covered in the earlier plan. Later, problem villages identified subsequently will be taken up. The Scheduled Caste and Scheduled Tribe habitations are to be given the highest priority. It has also been decided that the source meant for the benefit of such a category of population should be essentially located within the habitation; so that they have an easy access to it. As women are the principal beneficiaries they should be involved in the selection of sites for water sources. It has also been agreed that the voluntary organisations can play crucial role in motivating the people and promoting health consciousness. The Conference felt that there was an urgent need to develop low cost options for provision of safe drinking water in the rural areas as an alternative to the Capital Intensive Scheme.

It has also been decided that more attention will be paid to the maintenance. And efforts will be made to utilise ten per cent of the funds under minimum needs programme for this purpose.

Though the target of covering entire rural population by the end of current Five Year Plan is laudable, but in view of the paucity of resources it is also not easy. But if our determination and concerted efforts lead us to success in this task, it will really be a remarkable achievement.

(Courtesy : Spotlight, AIR)

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being delayed and also due to attack of white fly at flowering stage depressing the yield. However, in these blocks (1 to 6) where the Integrated Water Management and Productivity Scheme was in operation the variation of yield rate was negligible.

Similarly in the case of Nagarjunasagar Left Canals, which was affected considerably due to the breaches, productivity of paddy went up from 4053 kilos per hectare in 1983-84 to 4347 kilos per hectare.

The scheme, implemented in Andhra Pradesh with financial assistance by the World Bank, is likely to become a pace-setter for the country as a whole in the field of Integrated Water Management and Higher Productivity. It is significant that Government of India are themselves considering to plan for a similar National Water Management and Productivity Scheme based on the experience of the scheme implemented in Andhra Pradesh. The World Bank has also come forward with an assistance of Rs. 40 crore for the Integrated Water Management Project in Andhra Pradesh

Drinking water for all by 1991

In view of the U. N. Drinking Water Supply and Sanitation Decade (1981-91) the Government of India is making a determined effort to make available drinking water to all citizens by March 1991. The task is gigantic and full of difficulties. The articles gives an account of the enormity of the problem and the steps that are being taken to tackle it.

INDIA'S COMMITMENT to the UN Drinking Water Supply and Sanitation Decade is definite and unhesitating as is clear from the fact that the plan allocation (Rs. 49 crore in 1951—56) for water and sanitation rose to Rs. 3908 crore which later was further raised to 4177.51 crore in the Sixth Plan.

At the beginning of the decade (1981) only 77.7 per cent of the towns and cities and 31 per cent rural people had adequate supply of drinking water. Only about 0.5 per cent of rural people had some sanitary facility for disposal of human waste. Almost the entire rural population, some 52 crore of them, defacated in the open.

In a random survey in urban areas it was found that 27 per cent had flush latrines, about 67 per cent had dry latrines and some 33 per cent had no latrines at all. Such statistics may be cold and nauseating, but, without them the country cannot work out solutions to this problem. After various studies and their evaluation the Government of India is determined to go ahead with the programmes to make available drinking water to all citizens by March 1991. For waste disposal the target is to cover 80 per cent for urban areas and 25 per cent for rural areas. The estimated expenditure is Rs. 14,700 crore, which will cover 95 per cent of the people. Five per cent, who can not be covered, will be covered in Eight Plan.

The quantity needed

In the Code of Basic Requirements of Water Supply, Drainage and Sanitation, as well as the National Building Code, a minimum of 135 litre per consumer day (lpcd) has been provided with all residences which are provided with full flushing system for excreta removal. The earlier manual had recommended certain requirements for domestic, non-domestic, fire demand and industrial needs. The present committee has reviewed these figures and the following recommendations have been made.

Urban requirement depend upon the size of the community. Water upto 100 lpcd should be supplied to communities with the strength of upto 10,000, about 125 litres upto 50,000 and for communities above that 200 litres Each case will need to be studied individually.

In rural communities where house service connections are not contemplated and where water is given through hand pumps, the supply will not be less than 40 lpcd

Institutional demands also have to be taken into consideration. Hospitals with less than 100 beds will have to be given 455 lpcd per bed while those with more than 100 should get 340 lpcd. Hotels, nurses' hostels, boarding schools, restaurants, air and sea ports, railway junctions, offices, factories, cinemas, concert halls, and theatres have all to be supplied with water, both for drinking and for sanitation.

The implementation machinery

A machinery has been set up to make the realisation of this aim a reality. An Apex Committee with the Secretary of the Ministry of Works and Housing

to coordinate programme planning and operations has been formed. It constituted three Working Groups on "Financial Resources", "Materials and Equipments" and "Programme Manpower". Reports of the Working Groups have been approved by the Working Committee and endorsed by the Conference of State Ministers, Secretaries, Chief Engineers, and Heads of Implementation Agencies in charge of water supply and sanitation

In 1981, Government tried to define its target by describing a Problem Village as one which does not have a safe drinking water source within 1.6 kms. With an annual drainage of 1360 millions acre feet, it was not beyond us. The Lok Sabha Estimates Committee later wanted to define a problem village as one having no such source within 500 Hectometres (0.5 km). This change in definition could increase their number to 21,31,000 in the first category. Moreover, the depletion of ground water itself led to the increase in the number of villages which do not have water within 1.6 kms. All this had led to a substantial increase in the money to be invested and the efforts to be made to achieve the target in a given time frame.

Novel programmes

India took up this challenge by adding water supply to novel programmes such as Minimum Needs Programme (MNP) and Accelerated Rural Water Supply Programme. A sum Rs. 2140 crore was made available to these programmes. The target was to cover the original 21,31,000 villages by December 1984. According to latest available figures, 1,31,964 villages were covered by December 1983.

For human waste disposal 14,000 pour-flush, low cost latrines were supplied to 210 towns in 11 States and 3 Union Territories, till the end of 1983, under the aegis of the UNDP. They were well received, By December 1984, 37,738 new pour-flushers were installed in the same 210 towns.

These latrines cost only about Rs. 200 per unit and need just 1.5 to 2 litres of water for flushing. For a latrine with sewerage connections the running minimum cost Rs. 1500. The new latrines are simple in design and the village masons can reproduce them on a mass scale. All the 170 municipalities of Rajasthan have accepted this technology. Many States have started training personnel and State Governments are making provisions for this in their Plan estimates.

As an integral part of the Applied Nutrition Programme, water supply is provided to primary schools and rural health centres. About 20 States are utilising rigs to dig borewells in rural areas. A sturdy, reliable, deep-well handpump, the India Mark-II, developed by UNICEF is in extensive use in the countryside.

Role of women

In India, the importance of the role that women can play in national development was understood as early as 1971, in which year the Government of India constituted a committee on the status of women in India. It understook a comprehensive study and evaluation of all questions relating the rights and status of women in the context of the changing socio-economic conditions of India and the new problems relating to the advancement in women. Later a National Committee for Women was formed with the Prime Minister herself as chairperson. In 1977-78 the Planning Commission appointed a Working Group on Women and urged the Ministries of Agriculture and Rural Development to incorporate the needs and aspirations of women in rural development activities particularly in health, education and sanitation The National Conference on Women and Development (1979) followed suit.

Over the decade the number of Women's Organisations in India grew by leaps and bounds. Now there are more than 50,000 such bodies, in both urban and rural areas, varying in size, focus and financial status. Some have own international recognition and prestigious awards. "Women will be able to affect the political deliberations of the nation" is a prophecy of the Father of the Nation As it is coming through in different fields, decade programmes will also sure to have its impact.

Water and sanitation are functional to life. They are pre-requisites for healthy life. This is a field where Governmental Agencies and Voluntary Agencies have to work with the people to make it a success. As it is for the people, it has to become a people's programme if its ambitious aims are to be realised. Water must be treated a human right.

(Courtesy : Press Information Bureau)

Decline in poverty ratio

The poverty ratio in the country declined from 52.4 per cent in 1979-80 to 36.9 per cent in 1984-85.

The Seventh Plan aims at further reducing the ratio to 25.8 per cent in 1989-90 and less than 5 per cent by 2000 A.D. □

Developing wasteland, a compulsion

Arabinda Ghose

The country's population is growing fast and so is the need for producing more foodgrains to meet the increasing demand. But where to get more land for growing food ? The solution is either to raise per hectare yield or to bring under cultivation millions of hectares of land lying waste. At the instance of the Prime Minister a National Wasteland Development Board has been set up and an action plan drawn up to bring in 3.25 million hectares of wasteland every year under green cover. The author here calls for an integrated approach to various schemes of afforestation and greening of wasteland. He feels money must be found for this programme so as to leave the land in a better shape for the next generations.

INDIA TODAY IS in an enviable situation with regard to foodgrains. It is no longer the ship-to-mouth existence for the Indians. The green revolution of the late sixties has converted this country from a chronically food deficit region into one which today faces the problem of plenty. In fact there is not enough storage space available for the burgeoning foodgrains stock with the official agencies.

Why be complacent ?

Although this is a happy situation and India can now face even two consecutive drought years without importing any foodgrains, there is danger of everyone connected with foodgrains production and storage being lulled into complancency and lowering guards against scarcity. The rapidly increasing population and the steady increase in the economic condition of more people would result in greater demand for foodgrains year after year. Indeed, by the end of the century India has to produce a minimum of 225 million tonnes of foodgrains, fifty per cent more than at present. Which means that the pressure on land for growing food, fodder, fibre, fertilisers and feed will increase inexorably year after year.

Raise per hectare yield

Land, it must be realised, is a shrinking asset. More and more land is going out of cultivation year after year giving place to housing, roads, railways, airports and other community needs. The land area of India is 3.28 million square miles and this is of course constant. So, where do we get more land for growing foodgrains if we are to convert more and more farmland into other uses ? One solution is to raise the per hectare yield of foodgrains which is extremely low in this country. And the other is to bring under cultivation the millions of hectares of wasteland spread all over the country from the cold deserts of Ladakh, to the saline coastland in Gujarat, Kerala, Tamil Nadu, Andhra Pradesh, Orissa and West Bengal, as also to the hot deserts of Rajasthan, Gujarat and some districts of Haryana and Punjab.

If one were to mention the word wasteland to the well-known agricultural scientist, Dr. M.S. Swaminathan, Director of the Intenational Rice Research Institute, Manila, he would immediately react by saying that the proper term for such lands would be wasted land. Almost every piece of the so-called wasteland could be made productive in some way

or the other, he would say, either for agriculture or for forestry and pastureland.

Use wasteland fully

The country needs full and beneficial utilisation of wasteland not only for agriculture, but also for providing tree cover. It has been estimated, and confirmed by satellite picture that the actual extent of forest cover in the country is hardly 11 per cent although on paper it is twice as much. The National Commission on Agriculture in 1976 had estimated the need of at least one-third of the total land area of the country being under forests in order to preserve the ecology and prevent the country from facing the dangers of eco-degradation

The institutional help

Realising all aspects of proper utilisation of what is called wasteland, Prime Minister Rajiv Gandhi, immediately on assuming office last year, had declared that continuing deforestation has brought us face to face with major ecological and socio-economic crisis. This trend must be halted. He therefore proposed that a National Wastelands Development Board be set up with the object of bringing five million hectares of land every year under fuelwood and fodder plantations. He expressed the view that this board could even develop a people's movement for afforestation.

Following this, a Board was set up under the Chairmanship of Dr. Kamala Chowdhury. A few years ago, a non-official Society for the Promotion of Wasteland Development had also been set up in order to arouse public interest in the proper utilisation of the "wasted" land and to enlist people's co-operation as also those of the corporate sector and the Government in this gigantic task.

How much is wasted land ?

One of the tasks attempted by the Society has been to evolve a definition of what wasteland is and the estimate of wasteland in the country. The Ministry of Agriculture estimate of 175 million hectares of wasteland is not accepted by this Society. The two well-known soil scientists Dr. D. R. Bhumbla and Mr. Arvind Khare have meanwhile come to the conclusion that the total non-forest wasteland in India amount to about 94 million hectares.

This consists, according to them, of 7.16 million hectares affected by salinity and alkalinity, 12.92 million hectares affected by wind erosion, 35.38 million hectares affected by water erosion and 38.21 million hectares in the water eroded area in cultivated areas.

The Ministry of Agriculture estimate puts the estimate of degraded land as follows. In agriculture, between 40 to 60 million hectares out of the 143 millions hectares under agriculture is considered degraded. In the forestry sector, out of 75 million hectares, 40 million hectares are degraded of which 30 million hectares are without tree cover, and 10 million hectares have only some shrub. It also says that the pasture and grazing lands and other public land are the most degraded because they have also been the most neglected.

Rajasthan, according to this estimate, has the highest area of wasteland with 18 million hectares followed by Madhya Pradesh with 13 million hectareas and Maharashtra with 12 million hectares. Then there are the ravines and gulleys, mostly in Chambal and Jamuna basins in Madhya Pradesh, Uttar Pradesh and Rajasthan.

Deforestation goes on !

Unfortunately, although public awareness for re-plantation of the Vanamahotsava movement has taken the land and the momentous Chipko Movement of the Garhwal hills is providing another dimension to the conservation of forest and environment, land degradation continues unabated. One of the reasons for this is the lack of fuelwood for the poor. This indeed is one most significant single reasons for degradation of forest land in the country. another which is of recent origin being the cutting down of trees for packing fruit cases. It has been estimated that the apples grown on one hectare of land requires forests over an area ten times higher to be cut down for making packing boxes. A well known conservationist actually stopped eating apples when he came to know how much forest destruction takes place for supplying apples from the hills to other parts of the country

Then there is the need for fodder. There is an estimated shortage of about 150 million tonnes of fodder every year and studies in Karnataka and Rajasthan have shown that shortages go up to 50 and 80 per cent in drought years and cattle die in their hundreds as a result.

In order to tackle the problem of land degradation in a better manner and to bring back into profitable use the vast stretches of wasteland in the country, the National Wasteland Development Board constituted in May 1985, has been reconstituted as the National Land Use and Wasteland Development Council under the Chairmanship of the Prime Minister. The Council met in New Delhi on February 6, 1986.

Need for integrated approach

It has also been decided to set up two separate bodies under the Council : the National Land Use and Conservation Board and the National Wasteland Development Board. All this makes it evident that the Centre has now realised that to achieve the target of greening five million hectares of land every year, new strategies, policies and structures have to be adopted. There is also need for an inte-

grated approach to various schemes of afforestation and other ways of greening wastelands. It has also to be realised that people's involvement will be necessary in any such movement for growing saplings, establishing people's nurseries, and for distributing the sapplings to name a few.

and an action plan

It is heartening that beginning from 1986-87, an action plan has been drawn up for bringing, in the first place, 3.25 million hectares under green cover. This includes indentification of wasteland by the State Government, setting up of nodal agencies, arranging seeds, leasing of lands to the rural poor, providing land for growing urban fuelwood and green belts, and tackling degraded forest areas. Finally, monitoring and evaluation of the work will be done every year.

It is true that there will be shortage of funds for undertaking such a gigantic task. But the money must be found somehow so that the present generation leaves the land in a better shape for the next and next to the next generation. After all, we have not inherited the earth from our ancestors, but have borrowed it from our descendants. Wasteland development would indeed be India's contribution to hand over "spacious earth" to our descendants so that they can live without fear of being overtaken by ecological catastrophe. □

(Courtesy : Spotlight, AIR)

(Continued from page 16)

utility and fruit trees and afforestation coupled with soil and water conservation measures.

Achievements

India is one of the few countries which has taken initiative in the up-keep of the soil weather and gained considerable experience through wide range of soil and water conservation programmes. The programmes of soil and water conservation got diversified and improved through valve research efforts and feed back information from the field. The concept of watershed management which got impetus during Fourth Plan onwards is now the unit for plan formulation and implementation, adopting multi-disciplinary activities which are essential for checking degradation problems.

These programmes are implemented through State, Central Sector and Centrally sponsored programmes throughout the country. Through these programmes till 1984-85 a total area of 29.38 m.ha. has been treated with various soil and water conservation measures incurring an expenditure of about Rs. 1212.29 crores.

Programme for Seventh Five Year Plan

During Seventh Five Year Plan (1985—90) an outlay of Rs. 797.37 crore has been proposed for both State and Central Sector Programmes and an area of 6.75 m.ha. will be treated through various soil conservation measures during the Plan period.

The Plan-wise progress of physical achievement and expenditure is given below :

Period	Achievement (Area in '000 ha.)	Expenditure (Rs. in lakhs)
1	2	3
Ist Plan (1951-56)	303.35	160 00
IInd Plan (1956-61)	1273.18	2335.80
IIIrd Plan (1961-66)	4495.07	7683.58
1966-69	4684 42	8678.31
IV Plan (1969-74)	7322.36	16289 23
V Plan (1974-80)	4482 90	24469.85
1979-80	833.89	6788.72
VI Plan (1980-85)	5984.19	54823.49
Total till 1984-85	29379 36	121228.98
VII Plan (1985-90)	6750.00 (Target)	79737.00 (Outlay)

□

A working group on public finances set up

The Planning Commission has set up a Working Group to study the financial policy issues for sustained growth with reasonable price stability. The terms of reference of the group cover, among other things, a general review of the trends in public finances with special reference to the generation of resources for development.

The Working Group is to submit its report by November 30, 1986.

The other terms of reference of the working group are :

(i) To examine in-depth causes and areas of growth in non-plan expenditure giving emphasis to growth in government employment, impact of dearness allowance payments, growth in interest payments and the growth of subsidies ;

(ii) To examine, through detailed case studies, the possibility of re-deployment of staff which could be found to be surplus ;

(iii) To study and formulate sound policies regarding public borrowing and the management of public debt ;

(iv) To promote studies of the finances of major public enterprises, using the results to recommend measures to make them financially sound and capable of generating resources for their own development ;

(v) To promote and supervise studies of the finances of local authorities and the state of financial administration at the municipal level ; and

(vi) To study transfer of resources from the Centre to the States and make such recommendations as may be necessary. □

. . and ecological imperative too

Rajendra Sharma

Far from being contained, the wastelands are spreading fast creating anomalous situations like exodus from rural areas and the mushrooming of slums in the metropolitan cities. The Bhopal gas tragedy is a horrid pointer. There is also an unprecedented pressure on the forests resulting in deforestation, thus further aggravating the ecological imbalance, altering soil chemistry and giving rise to floods. All this, says the author, calls for vigorous efforts to develop our wastelands. He suggests ways to check the menace, including active role of the private sector and the cooperation of village cooperatives in this endeavour.

THE DEVELOPMENT OF WASTELANDS which are, by and large, Wasted lands, is of paramount importance, not only for growth with justice but sustained development—which is essentially development based on a strong ecological footing and thereby the dream of entering the 21st century with an environmentally healthy nation can be realised. Realising the importance of the development of wastelands the Prime Minister, Shri Rajiv Gandhi, in his first broadcast to the nation on Jan. 5, 1985, after the general elections, announced the creation of a National Wasteland Development Board, an apex body for the development of hitherto neglected resource.

There is no well defined estimate of the wastelands in the country. The Society For The Promotion Of Wasteland Development has estimated it as more than 100 million hectares, which does not include forests areas. The second Citizens Report Of The Centre For Science And Environment released recently in August, 1985 states that the extent of wastelands would be between 111 million and 131 million hectares, taking into account the varying estimates of the degraded forest areas. These lands are, by and large, problematic lands, for eg lands affected by wind-water erosion, ravine lands, waterlogged lands, saline lands, etc. Besides, it also includes a substantial chunk of forest lands which have become degraded on account of excessive biotic pressure on these lands

Wasteland-slum nexus

Let us examine the scenario in the country which makes the development of these lands an imperative At the very onset we look into the condition of our cities, especially the metropolitan cities which have become veritable gas chambers but still serve as magnets for the rural poor, who having no employment opportunities at their home place, are driven to these cities in search of employment for eking out sustenance. These migrants, are more in the nature of ecological refugees, as their socio-economic and cultural roots have been destroyed owing to more and more lands turning into wastelands by way of deforestation, water-logging, floods, droughts, etc. There has been lot of discussions regarding making metropolitan cities to grow in a polynodal fashion or to create counter-magnets, as is the case of Delhi, where the surrounding areas in U.P., Haryana and Rajasthan are proposed to be developed as NCR (National Capital Region), so as to meet the increasing demands of shelter, transport, recreation, etc. and thereby in that process to accommodate these migrants But the harsh reality remains, that unless the rural exodus is not arrested, the growth of the cities and their concomitant problems cannot be reversed and the urban explosion in India will not be a myth as claimed by Nigel Harris (in the Times of India, Dated the 4th

Sept., 1985) but an excruciating reality. The slums are increasing at an alarming rate and have become powder kegs of violence; the Planning Commission estimates that 20 per cent of India's urban population lives in slums. The Bhopal tragedy, the world's biggest industrial accident, in December, 1984 is a straw in the wind, which indicates the threats to which the people living in the urban areas are exposed to, and the possibilities of other such similar Bhopals is not ruled out, in the light of the current trends in industrialisation, involving concentration of high-risk industries in selected growth centres The highest percentage of the TB-affected persons in the world are in Kanpur, Bombay, Calcutta and Delhi. The frightening dimension of this tragedy is that not only the present generation has been affected, but also the future generation has been crippled for all times to come, by way of the delivery of mal formed babies by the women affected by this nightmare. The recent Mexican earthquake disaster in the last week of September last year involving lakhs of people, is a sad commentary of fact that there exists a nexus between lopsided development of cities and natural calamities

Soil Chemistry altered :

The construction of major dams and large canals have further aggravated the problem, and invariably resulted, in accelerating soil salinity through water logging besides deforestation which has been to the tune of 600,000 hectares and which in turn, has led to the problem of siltation, to more than five times than what was expected. Punab, Haryana, Gujarat, West Bengal, U P and Andhra Pradesh are the worst affected states by way of increasing salinity. In the Tungabhadra canal area alone in A P., the crop yields, have been reduced by 30 per cent In total, 10 million hectares of once fertile land had become waterlogged and another 25 million hectares were threatened with salinity, which has resulted in social destabilisation, and the resulting immigration to cities. The persons who are displaced as a result of such activities, are usually settled in such places where they are unable to meet their sustenance, resulting in their migration to nearby cities. The case of the Narmada Sagar Project in Madhya Pradesh is akin to that mentioned above, as it involves submergence of 255 villages in the dam reservoir, displacing about one lakh people, and in the absence of a comprehensive policy on rehabilitation the economic security of these people is at stake resulting in inevitable migration.

The run-off problem:

The problem of drinking water is also becoming more and more acute and the shortages in rural areas create an environment congenial for the rural exodus as there exists a complex nexus between water and rural community. In UP alone it is startling that out of 57 districts, 43 districts are reeling under an acute drinking water famine. In Maharashtra the picture is also gloomy with, 17,112 villages facing drinking water problem during Sixth Plan and their number has increased to 23,000. The UNICEF report has revealed the fact that water supplied by 70 to 80 per cent of the hand pumps in Tamil Nadu was polluted and so is the case in UP, where in 25 per cent hand pumps the water is polluted. This is mainly because of the seepage, of polluted water. The infiltration capacity of the Soil has been greatly reduced due to the absence of organic matter in the soil as it is denuded of vegetal cover, and the rain water finds its way ultimately into the rivers without infiltrating and creating in turn the problem of floods. Last year's crash floods in Lucknow and Eastern U.P. bear ample testimony to the fact that the catchment areas of the rivers are heavily deforested resulting in poor infiltration and high run-off. The damage on account of floods is to the tune of Rs. 300 crore a year. The land has been misused to such an extent that there is no addition of organic matter and even in the agricultural fields there is an acute shortage because most of the organic matter in the form of the farmyard manure is burnt as fuel, which should have found its place in the fields This, on one hand, has created the problem of erosion of the soil in agricultural lands, involving removal of around 6000 million tonnes of fertile top soil every year with the passage of time, these lands are converted into marginal lands which can not support sustained agriculture, and to put the idea statistically, the productivity of even the irrigated lands had remained at 1.7 tonnes per hectare, when their productivity should have been at least 5 tonnes per hectare. On the other hand, since 48 per cent of the precipitation is lost through evaporation and transpiration, the recharge of the ground water is slow as out of even 52 per cent of run-off, most of it finds its way in the rising level of rivers above, danger mark and bringing unending miseries to the people in its trail. The over exploitation of the meagre sub-soil water is resulting in the drying up of the resources. Thus, in the absence of any water use policy at the national and state level, the major rivers of the country have become no more than sewer line. This has necessitated the cleaning up of rivers and the setting up of a Central Ganga Authority is step in this direction which has been initiated by the present government.

The grazing problem :

The country supports one-seventh of the world's livestock population. The present livestock population can be roughly estimated to be about 390 million. With such large a population, and incompatible fodder resources, we are facing not only water famine but also severe fodder famine and which has manifested itself in violent clashes, for eg., in Saurashtra region of Gujarat half the cases in tehsil courts relate to disputes over illegal grazing, not only in forest areas but also in private land—a stark revealation brought out in the second citizen's report of centre for science and environment, and resulting in further marginalisation

of nomads who form six per cent of the country's population and which has resulted in the nomads to give up their traditional life style and to become landless labourers and eventually drifting into the cities for job. As estimated by the National Commission On Agriculture, the availability of the fodder in the country was about 20.7 crore tonnes from straws and stoves, 21.4 crore tonnes from areas under fodder crops and 1.3 crore tonnes from 13 million hectare grasslands against the requirement of 44.5 crore tonnes of green fodder and 43 7 crore tonnes of dry fodder. This implies that only 50 per cent of the fodder requirement is met with, and this had led to an increase in the animal units per hectare of grazing land to an appreciable extent. In Rajasthan between 1951-52 and 1977-78 there has been an increase in the animal units from 39 to 105 per 100 hectare of common grazing land. Overgrazing in these lands has resulted in accelerating erosion and most of the common grazing lands in the country are today waste lands which do not provide grazing but simply serve as exercise grounds for the village cattle The net deficit of fodder balance is exercising tremendous pressure on our forest resources which is amply evident if one moves in the countryside in western Rajasthan where it is rare to see any single khejdi tree (Prosopis cineraia) not being lopped for fodder. The trees are mercilessly hacked for top feed for camels, goats and sheep. The grazing incidence has risen from 11.5 per cent to 15 4 per cent, and it is feared that this incidence may be much more than reported, as pointed out by the Committee for review of rights and concessions in the forest areas of India headed by Shri M. S. Chaudhry in their report submitted to Govt. of India in March, 84. The second citizen report on the state of India's environment also points out the impact of overgrazing in the Himalayan region, which is a very sensitive ecological zone as it constitutes the watershed of the important Indian rivers. The region support about 20 million cattle, 10 million buffaloes, 3 million sheeps and 6 million goats and this population is around 3 to 5 times the carrying capacity of the local pastures and forests. It has resulted in the failure of the natural regeneration of some of the important tree species of this region, for eg., Apies pindrow (Fir) in Himachal Pradesh on one hand, and on the other, it has led to increasing soil erosion and further degradation of the forest areas. These constitute the critical areas where immediate steps have to be taken for their rehabilitation, using appropriate soil and water conservation techniques and their subsequent afforestation so as to avert an ecological disaster.

Pressure on forests :

The degraded lands have resulted in creating fuelwood scarcity, which in turn, has made more and more productive forest areas into degraded lands giving rise to a vicious cycle. The non-commercial fuels account for 90.57 per cent of the energy consumption in the rural sector in the country, out of which firewood accounts for 59.29 per cent in rural India. The requirement of firewood is round 200 million m^3, out of which only about 16 million m^3 is the recorded production. The balance is met in a large way through illicit removals, catalysed by rights and concessions, in the managed forests and also from tree and tree lands outside the managed forests. With the increasing growth in unmbers, which is unprecedented in the economic and demographic history, as one of the recent reports of the World Bank point out, the growth rate of 2 1 per cent is bound to widen this deficit further, leaving us with no alternative but an ecological crisis of Himalayan dimensions, jeopardising the very basis of survival of the Home sapiens on this plant. The disaster has already manifested itself in accelerated soil erosion, which in turn has set up a vicious cycle resulting in the degradation of the land resource of this country It is a common sight to see in western part of Rajasthan that even the roots of Calligonum polygonoides (Phog) are dug up and transported to the cities through headloads, camel carts and trucks for sale. This has resulted in the shifting of sand dunes as the ground becomes, completely devoid of vegetation and the prevalance of strong winds in this tract of the country inevitably lead to the expansion of deserts, and with the passage of time the area becomes inhospitable for the human settlement.

The position on the timber front is also highly unsatisfactory Small timber is required for meeting the house-hold needs in rural India by way of construction and for repairs to houses, furnitures, handicrafts and above all for agricultural implements The shortage of the raw materials has displaced a large number of artisans from their traditional jobs The paper mills have come in the way of these artisans, and the increasing demand for paper has resulted in increased demand of more and more conventional raw material, like bamboo on one hand, and also the diversion of the non-traditional raw material for the production of pulp on the other The bhabbar grass (Eulaliopsis binata) which was used for making ropes for use in cots by the local artisans in Sharanpur in U.P., is now being supplied to the paper mill by the UP Forest Corporation resulting in about 40,000 families loosing their traditional jobs. Nearly 2.5 million tonnes of bamboo is at present extracted for pulping. The discarding of side branches results, in a wastage of 10 to 12 per cent of the valuable raw material as well as, 5 per cent of the raw material is wasted on account of stocking and consequent attack by borer and white ants. Thus about 0 25 million tonnes of useful raw material can be utilized by way of utilizing the side branches, and another 75 to 80 thousand tonnes of raw material by reducing attack of borer and white ants in stacking. At the present population growth rate our population is expected to touch about 94.5 crore by 2,000 AD. With marginal increase in the per capita consumption of paper, we shall need nearly

4.5 million tonnes per year installed capacity for production of paper and board by 2000 A.D. This capacity at 80 per cent utilization will give us 3.4 million tonnes of paper per year.

Year	Capacity requirement (lakh tonnes/yr.)	Production expected at 80 percent capacity utilization (lakh tonnes yr.)
1986	22 00	17 60
1991	28.00	22.40
1996	35 00	28 00
2000	42 56	34 00

The following is the utilization pattern of the raw materials in paper industry.

S No	Mill category	Raw materials	Approximate usage in percentage
1	Large	Bamboos	75
		Hardwoods	22
		Softwoods	1
		Others	2
2	Medium	Agricultural residues	80
		Waste paper	15
		Purchased pulp	5
3	Small	Agricultural residues	40
		Waste paper	60

It is evident from the above that a large utilization of the bamboo as a raw material for paper industry has resulted in economic hardship for thousands of Harijans & tribals who used to make living by making bamboo baskets, boxes and brooms. Similarly, a large number of workers in Kerala working in the Coir industry are facing crisis of raw materials, owing to the fuel wood scarcity because of which a large portion of the husk is burnt as fuel.

The Planning Commission has estimated the following demand for industrial wood (in million (m^3 round wood equivalent).

	1975	1980	1985
Timber	15 75	22.90	33.21
Roundwood	2.75	3 99	5.78
Pulpwood	2 66	4 80	9 94
Matchwood	0 40	0.49	0 57
Total	21 56 Say 22	32 18 Say 22	49 50 Say 50

As against these demand the production is just 14 million m^3. Timber requirement for bullock carts, agricultural implements, etc. has been estimated at 40 lakh m^3 per annum. Whereas, in the case of packing cases it has been estimated that about 10 hectares of properly managed forests is required for packing apples from one hectare, which puts the requirement at 20 lakh m^3 per annum. This additional 60 lakh m^3 of timber is being obtained from the forests much against its productive capacity as mentioned in the report of the Chaudhary review committee on rights & concessions in the forest areas of India. It tantamounts to more and more pressures on the forests causing further degradation of forest areas, and converting them into wastelands.

What's being done :

The scenario is, therefore, very distressing and gloomy and calls for certain urgent and radical measures. The greening and cleaning of the India's environment has thus become an ecological necessity and the present government has come up with certain bold initiatives by way of creating a National Wasteland Development Board and Central Ganga Authority. The Department of Environment is presently engaged in drafting legislation for polluting industries, with respect to the location policy for such industries, regulations on the manufacture, distribution, sale, diffusion, usage & disposal of hazardous wastes. These polluting industries are presently identified to be 21, for which prior environmental clearance would be required before the issue of a letter of intent. In respect of investments below Rs. 5 crore, which are registered by the State's Directorates of industry, clearance would be given by the state, Govt.'s department of environment or the nodal agencies identified by them for this purpose. For investments above Rs. 5 crore, for which the letters of intent are issued, by the Govt. of India, such clearance would have to be sought from Department of Environment, Ministry of Environment & Forests, Govt. of India. The clearance would also be sought for the location of industries in ecologically sensitive and fragile areas. At present such clearance is needed for only two notified areas—the region around the Taj Mahal and the Doon Valley. But now the list of sensitive areas is to be extended to include the Jaisalmer region in Rajasthan, all National Parks and Sanctuaries, coastal areas rich in corals and mangroves, hill resorts and places of religious & historical importance.

This will go a long way in arresting the degradation of the forest areas by way of industrialisation and thereby preventing, the forest areas from turning into wastelands.

Resort to alternative sources :

The burgeoning demand for fuelwood can be met by adopting a three pronged strategy, the constituents

of which are :—

(i) Large scale energy plantations on wastelands for which the target has been fixed at 5 million hectares per annum in the Seventh Five Year Plan.

(ii) Developing alternative sources of energy, particularly the commercial sources, and substitution of wood wherever feasible.

(iii) Conservation of fuelwood by the use of improved chullahas and improvised crematorias which also accounts for a large consumption of fuelwood in the country.

The non-conventional energy sources like Solar energy, wind energy, are still in the stage of infancy, though the Department of Non-conventional Energy Sources has proposed investment in no less than 18 different sources of non-conventional energy in the Seventh Five Year Plan. The biogas plants are being talked about the most as an alternative to fuelwood, and Takli Ambad a village of Aurangabad district in Maharashtra has set a record by setting up 42 biogas plants. It has also been found that the installation of biogas plants gives a gross return of 14 to 18 per cent on the investment but at present the cost of installation of one unit is very high, around Rs. 2,400—which is too high for the rural poor to afford, and it also presupposes the fact that the owner possessed five heads of cattle. The wind mills are also very costly, to be afforded by the rural poor as it entails a cost of about Rs. 10,000 to 12,000 including installation charges. The mill can pump over 2,000 litres of water per day on quiet days with wind velocity of 7 km. hr. & the mill revolves 12 times per minute. The speed can go upto 107 revolutions a minute when the wind blows at 36 kms/hr. and pumps out 26,850 litres of water, with inbuilt safety device to withstand devastating cyclones when the wind blows at a velocity of over 90 kms. an hour.

A number of domestic Solar cookers, have been devised by the energy development agencies of the states and have been heavily subsidised at Rs. 300 per cooker but it has not taken roots in rural India, where it is still thought to be incompatible with the traditional rural life-style. Some amount of motivation can help, in making the people, in the rural areas to realise the importance of such cookers, in saving the fuelwood which has now become a scarce commodity.

and energy plantation

The fact, therefore, remains that at the present level of socio-economic development, the contribution of the non-conventional energy sources would be only marginal. Efforts would have to be made on the development of wastelands, for increasing the production of fuelwood, and at the same time, fuelwood saving devices would have to be introduced in rural areas, by going in for various models of the improvised chullahas which would have the demand for firewood for cooking. The cost of setting up such chullaha is also within the reach of rural poor and fits into their traditional life-style. Pressure Cookers can also be supplied either free of cost or through heavy subsidy. The cost of raising such energy plantations would be around Rs. 8,000-10,000 per hectare (looking into the fact that for raising such plantations watering, fertilization, pesticides, etc., is very much essential) and, therefore, involves, lot of financial implications on the budgetary resources of the country However, some of the centrally sponsored programmes, like NREP, RLEGP, IRDP can come to the rescue by providing some funds for these activities. Besides, at present FCI has built up a huge grainstocks of around 30 million tonnes which is expected to swell further by 4 to 5 million tonnes in the next 12 months. Such huge stocks will pose severe storage and management problems and, therefore, at the present juncture, it can be brought of being liquidated by taking up of food-for-work programmes by using it for part payments of wages in other centrally sponsored programmes, mentioned above. This in turn would not only provide the necessary resources for the development of waterlands but also it would ease the storage and management problems now being faced by FCI as nearly 9 million tonnes are lying in the open, involving a huge cost on maintaining these surplus stocks.

Invite private sector:

The other way, to meet the problem of resource constraint, is to invite the private sector in the development of these lands. These lands can be leased at nominal rates for a period of say 30 years. or so, and it can be made mandatory on the private sector to sell ascertain percentage, say 20 per cent, of the produce at the rates fixed by the government, while the remaining 80 per cent of the produce can be sold at the market prices. These land can also be thought of for leasing to the landless labourers and the required funds can be arranged as loan from the lead banks of the area concerned. The concept of establishing plantation co-operatives on the lines of some of the co-operatives which have been established in Gujarat far e.g., in the Chikhii taluka of valsad district, will go a long way in developing this hitherto neglected resources. The necessary expertise can be provided by the forest departments of the states including nursery techniques, methodology for seed treatment, appropriate pest control measures, etc.

and village cooperatives:

These lands can also be used for the development of fodder plots to meet the increasing demand of fodder. Such plots can also be developed through village cooperatives, especially on the village common lands which at present are in extreme stages of

degradation and are wastelands for all purposes. The district rural banks|co-operative banks can come to the rescue of such village co-operatives by way of providing adequate financial resources needed for such development. Again, the role of the forest departments can be of advisory nature and such schemes can be integrated with other animal husbandary schemes in the villages.

In the ultimate analysis, the development of the wastelands is a sine qua non for the socio-economic development of the country, and is inextricably linked with the ecological rehabilitation to achieve the desired goal which the draft Seventh Five Year Plan has expressly spelt out and that is, to bring the number of persons living below poverty line (Income of Rs. 6,400 per year for a family of five members) from 37 per cent to 26 per cent, which would ensure, not only growth with equity but also development with conservation. □

Rehabilitating the handicapped

About 81 per cent of about 120 lakh handicapped persons in the country are in rural areas alone. According to latest statistics the maximum number of the disabled, i.e., 20.25 lakh, are in Uttar Pradesh This is followed by Bihar with 12.61 lakh, Andhra Pradesh with 12.18 lakh, Tamil Nadu 10.24 lakh and Maharashtra with 9 37 lakh

The Union Government has been assisting States as well as voluntary organisations working in the field, although the primary responsibility for the welfare and upliftment of the handicapped is that of the State Governments

The Centre provides infrastructure for the betterment of the handicapped persons, including assistance for purchase|fittings of aids and appliances, scholarships, provision of facilities for integrated education of handicapped children employment and rehabilitation. Fittings or aids costing between Rs 25 and 1,500 are provided free of cost to the handicapped with monthly incomes of Rs 750. There is a provision for graded assistance for those with incomes higher than Rs. 750. Under the scheme wheel chairs, tri-cycles, calipers, artificial limbs, hearing aids, educational kits for the blind, etc , are supplied Scholarships scheme under the socio-economic rehabilitation programme for the handicapped covers students from class 9th onwards The State Governments provide free education to all students up to Standard 8th In addition, the Union Ministry of Welfare provides assistance in the form of grants-in-aid upto 90 per cent of estimated recurring and non-recurring expenditure to voluntary organisations in the field.

The scheme for integrated education of the handicapped with the normal children includes provision for grants towards expenditure on teaching staff, resources and assessment facilities.

There is a reservation in respect of employment of disabled persons in Central Government and Central public sector undertakings. Under the scheme 3 per cent of the vacancies in Group C and D are reserved against identified jobs for the physically handicapped. The Central Government has also organised 22 Special Employment Exchanges throughout the country to help the handicapped secure suitable jobs or employment. In addition, there are 36 special employment cells in the general employment exchanges for helping the handicapped seeking jobs.

There are 14 Vocational Rehabilitation Centres in the country to assess the residual help of the disabled, arrange their training and help them find suitable regular placements. There are also 6 skill training workshops and 11 rural rehabilitation centres attached to the vocational rehabilitation centres to promote the opportunities of employment to handicapped in rural areas.

Four apex level national institutions in the field of education, training, voluntary guidance, counselling, research, rehabilitation and development of special service modules for the handicapped are active in helping to tackle the multi-dimensional problems of the physically handicapped □

Ocean Science and Technology Board

The Ocean Science and Technology Board has been set up under the Chairmanship of Secretary, Department of Ocean Development. It will act as a focal point for inter-departmental and inter-ministerial coordination in ocean related activities for establishing an integrated approach for efficient exploration and exploitation of ocean resources.

It will also formulate guidelines for integrated programmes for ocean research and technological development.

Other members of the Board are · Secretaries of the Department of Science and Technology and Ministry of Petroleum and Natural Gas ; Director-General, Indian Council of Agricultural Research ; Defence Adviser ; Secretary, Department of Mines Besides, noted scientists, Dr. M N. Siddiqui, Prof V. S. Raju and Dr S. Krishnaswami will also be members of the Board.

The Board will review, monitor and evaluate periodically the implementation of various ocean related policies and programmes dealt with by different Ministries and Departments, and evolve appropriate future policy options and long term policies for integrated and optimum exploitation of ocean resources. □

Climatic variations, drought and desertification

Dr. R. P. Sarkar

The World Meteorological Organisation has chosen this year's theme as "Climatic variations, drought and desertification". The theme is apt in view of the severe climatic conditions that have badly disrupted life in many countries. The Sahelian drought in North Africa in 1968-73 and recent droughts in Ethiopia, Somalia and other regions of Africa are evidence of climatic variability. The author here discusses the importance of meteorology in forecasting droughts and climatic variations, particularly, in the context of Indian conditions.

WEATHER DOES NOT RECOGNIZE manmade boundaries. Weather phenomena travel from one country to another. Atmospheric changes in one part of the world influence the weather and climate in another. Further, meteorological events greatly influence the economy and development of individual nations. The importance of meteorology in daily life and longterm planning is, therefore self-evident. A special theme is chosen by the World Meteorological Oraganisation (WMO) every year to focus attention on one particular activity. This year's theme is "Climate Variations, Drought and Desertification".

Drought disasters

The WMO could not have chosen a more apt theme because in recent memory severe climatic events have disrupted life rather frequently in many countries The Sahelian drought of 1968-73 in North Africa attracted considerable public attention. The drought recurred recently with increased intensity and spread to Ethiopia, Somalia and the neighbouring countries of that region. This prolonged drought has demonstrated the realities of climatic variability and its significance for the human societies, particularly those of the developing world.

And role of man

Until recently, any variations in climate and their associated impacts were assumed to be natural events beyond the control of man. There is now an increasing awareness that human activities themselves can also affect the climate on a large scale. Many examples can be quoted. However, suffice it to say that human intervention has caused important changes in large areas of the Earth's surface and in the composition of the atmosphere. The effects of these changes will, in time, work their way through to the complex system that determines the global climate. It is likely that the consequences will become noticeable in the next few decades.

Awareness

The study of climate, climatic variations and drought has received much attention in the 'United Nations and in other specialized agencies. At the United Nations Conference on the Human Environment in 1972, it was emphasized that the world was facing an international problem of an unprecedented nature, the solution of which could be achieved only by the closest collaboration among nations. Adverse weather in many parts of the world, including a bad monsoon in India in 1972, triggered a world food

crisis. This led to the convening of the United Nations World Conference in 1974 which recognized the important role of climate in food production. Likewise, the 1977 United Nations' Water Conference emphasized the importance of understanding climatic variations and their effects on water supplies and usage throughout the world and the United Nations Conference on Desertification the same year also stressed the need to understand climate.

Climate variations, drought and desertification have a profound effect on agricultural output. Moreover, we have to view this in the light of tremendous pressures of increasing population especially in developing countries. We also have to remember that increase in population definitely leads to degradation of soil resulting in more desertification and eventual climatic variation. The problem is thus not only complex but of immense dimensions. The problems of climatic variations, drought and desertification occur on many timescales and these involve numerous scientific disciplines of which meteorology is a very important component.

INSAT support

In India, we are fortunate to have an established national meteorological service (the Indian Meteorological Department) which has a continuous tradition and record of 110 years. It is among the oldest meteorological services of the world. We have an excellent data ban of over 100 years and this anique data base is continuously augmented by observations from a dense net-work of observatories. The advent of the Indian National Satellite (INSAT) has provided the most modern and versatile input to the national meteorological data bank. We are connected to the global meteorological circuits so that we have the meteorological data not only from the neighbouring areas but from all over the world within a couple of hours of observation time. We have modern scientific computers to digest this enormous volume of data that continuously flows in Based on these data, climatic records are built and regularly updated.

Agricultural meteorology

The India Meteorological Department, since its inception in 1875, is conscious of the link between weather, climate and agriculture. It is a tribute to the foresight of Indian Meterologists that a well-organized Division of Agricultural Meteorology was started in 1932. The agro-meteorological services of the Indian Mtteorological Department have greatly expanded since then. One area of research recently has been on Dry Farming tract which comprises 87 districts in 9 States. Here the crop is entirely dependent on limited rainfall and there is no irrigation facility. The objective here is to evolve the right type of cropping pattern on a long-term basis so that food production is stabilised at an optimum level with the limited available water. The Department has started rendering specific advisories to the farming community for their various agricultural operations depending upon past, present and expected weather and conditions of crops. This is being done in close collaboration with the Agricultural Scientists. This activity will be considerably expanded in the coming years.

The India Meteorological Department and the Indian Institute of Tropical Meteorology, Pune, have done extensive work on climatic variations, particularly with reference to rainfall and temperature. Detailed analysis of past 100 years data shows that there is no definite increasing or decreasing trend nor any definite periodicity. However, there are year to year fluctuations which are random. These fluctuations will continue to occur, droughts and floods will occur and so also the unseasonal rains. This is a fact of life and we have to learn to respond to this and develop strategy to meet these situations.

Combating draughts

Drought is generally defined as the deficiency of rainfall from its normal value over an area It affects water supply, irrigation and agriculture. It is, therefore, natural that many national Institutes and Universities besides the India Meteorological Department would be studying the problems of droughts in India. The India Meteorological Department established a Drought Research Unit in 1966. Besides identifying areas and years of droughts and their intensities, it has been possible to monitor agricultural drought during Kharif seasons. Studies are also in progress to forecast years of deficient monsoon based on antecedent flow patterns, synoptic conditions and meteorological parameters However, drought prediction, which is our main aim, is yet to be achieved any where in the world and considerable research work is still required to make a breakthrough in the link between atmospheric variables and drought incidence.

Monitoring essential

In fact, it is now well recognised that regular monitoring of climate and adoption of proper land-use practices hold the key to improve climate and to minimise the effects of droughts and desertification. This calls for massive investments both in terms of the peoples will and resources on a global scale. This scenario underlines the importance of the work by national meteorological services on the national scale and the international coordination on global scale by UN agencies, such as, the World Meteorological Organization. In this task meteorologists, soil and plant specialists, agrononists and geographers have to join hands and brains together. As for our country, the India Meteorological Department. In close cooperation with other national institutes and universities active in this fields, is already working actively in this area.

(Courtesy · Spotlight, AIR)

Rao Committee on Poverty Alleviation Programme submit reports

A COMMITTEE SET UP by the Planning Commission in March 1985 to review the existing administrative arrangements for Rural Development and Poverty Alleviation Programmes (CAARD), and suggest appropriate structural mechanisms for planning and implementation of these programmes, has submitted its report. It was headed by Dr. G. V. K. Rao, a former Member of the Planning Commission. The Committee has observed in the report that the process of economic development itself should be designed to reduce poverty taking an overall view of rural development, including the role of various agencies at the field level.

The principal findings of the Committee pertain to the weaknesses of the present system of development administration at the district level and below. It has observed that there is a proliferation of development agencies leading to departmentalisation and fragmentation of functions The multiple agencies, programme-wise and sector-wise, are presently competing to serve essentially the same target group. There is a complete lack of involvement of the people in rural development programmes, and the Panchayati Raj institutions have become dormant.

The Committee also observed that at the district level, the Collector is heading the set-up which is oriented towards maintenance and not development. At the block level, the Block Development Officer (BDO) has become ineffective and has no control over the Extension Officer (EOs) and Village Level Workers (VLW), due to the fact that they owe their primary loyalty to the line departments.

The Committee has made certain recommendations meant to correct above shortcomings. The main recommendations are :

(a) Involvement of the people and their representatives should be a continuous process in the programmes of rural development. The administrative machinery should be organically linked to the Panchayati Raj institutions at the grass-roots level. In addition, voluntary agencies, with 'informed idealism', operating in rural areas, should be encouraged in every possible way.

(b) An alternative structure of administration with closer horizontal and vertical linkages at each level of administration, i.e., the block, the district and the State, should be set up.

(c) At the block and district levels, an integrated and cohesive development bureaucracy should be created which will be separate and superior to the present 'maintenance' bureaucracy headed by the Collector. At the district level this bureaucracy should be headed by a senior IAS Officer with at least 11 to 16 years of service, and called the District Development Commissioner (DDC). At the block level he shall be supported by an Assistant Development Commissioner (ADC). The ADCs should be below 35 years of age and should be drawn from the IAS, the State Civil Service, and selected from among the dynamic officers belonging to line departments.

(d) Also, significant restructuring of planning and implementation machinery at the block and district levels should be effected.

(e) At the State level, the coordination functions should be performed by the Development Commissioners who would be of the rank of Additional Chief Secretary. ☐

The Thein dam project, harbinger of prosperity !

P.J.S. Trehan

The Thein dam is a multipurpose project, having numerous direct and indirect benefits like irrigation, production of electricity, flood control, development of fisheries, tourism and recreation. Completion of the dam will accelerate the process of development in the three states, i.e., Jammu, & Kashmir, Himachal Pradesh and Punjab.

THE 6TH OF NOVEMBER 1985 WILL BE REMEMBERED by the people of Northern India as a red-letter day. On this day the Prime Minister, Rajiv Gandhi, laid the foundation of the prestigious Thein Dam Project near Pathankot.

What it seeks to do ?

The rights of unrestricted use of water of the three eastern rivers of the pre-partition Punjab, that is, Sutlej, Beas and Ravi were vested in India under the Indus Water Treaty of 1960 with Pakistan. The completion of the gigantic Bhakra and Beas multi-purpose projects on rivers Sutlej and Beas has ensured the storage and use of their waters for power generation and irrigation purposes in this region. But the water of River Ravi remained to be fully utilised. The construction of Thein Dam Project will enable utilisation of Ravi water for generation of power and irrigation in this region.

The Thein dam project lies under Low Shivalik Ranges of the Himalayas and is located near the sleepy village of "Thein" about 24 kms. upstream of Madhopur Head Works near Pathankot in Gurdaspur District of Punjab. The Dam site is about 520 kms. north-west of Delhi. The inter-state boundary between Punjab and Jammu and Kashmir passes along the centre of the river Ravi. Thus the right abutment of the dam will be in Jammu and Kashmir and the left in Punjab. The site of the dam first came under consideration in 1921. It was thoroughly inspected by Willey's Committee during 1926-27 and a detailed report was prepared by that Committee. The Willey's Committee had recommended two alternative sites for the construction of storage dam on the river Ravi. Nothing substantial could be done in the years that followed, until 1964 when a detailed project report envisaging a multi-purpose project was submitted to the Centre Finally the project received the approval of the Planning Commission in April, 1982.

Punjab was deficient in food production at the time of the partition of the country in 1947. It has since become a surplus state and a major contributor of foodgrains to the Central pool. This has become possible through the judicious development and use of land, water and power resources. The major contributing factors possible for this achievement are the conservation of water in the reservoir of Bhakra Dam and Beas Project, its utilisation for the generation of power and irrigation, extension and improvement of canal system, development of tube wells, mechanization and modernization of agriculture and development and introduction of high-yielding varieties of crops. At present, however, the demands for power in Punjab has gone much ahead of its availability and this fact is adversely affecting the further development of agriculture, industry and commerce in the state. This calls for concerted

efforts to increase its availability through tapping more resources of hydro and thermal power.

How it will be like ?

The Thein dam project estimated to cost over 750 crore rupees envisages the construction of 160 metre high earth core-cum-gravel shell-dam across the river Ravi and 600 Megawatt Power Plant comprising of four units of 1.50 m.w. each. Out of the four diversion tunnels now under construction, two will be used as power tunnels and the remaining two as irrigation tunnels. At the top the length of the dam will be 565 metres and it will be 692 metres wide at the base.

A beautiful Lake Ranjit Sagar named after the Maharaja Ranjit Singh, the renowned ruler of Punjab, will be formed upstream of Thein dam. Covering a total area of about 88 sq. kilometres it will extend to about 22 kilometres in maximum width of 5 kilometres. The total storage capacity of this reservoir will be about 33,00 million cubic metres. A concrete spillway is proposed to be constructed on the left side of the dam to pass flood water in excess of capacity of the reservoir. The flow in the spillway will be controlled by radial gates.

A boon for the region

The Thein dam project is a multipurpose project having numerous direct and indirect benefits like irrigation, power, flood control, development of fisheries, tourism, recreation, building up of new settlements and road and improvement in the pattern and growth of crops. Besides generating 600 MW power the stored water in the reservoir will provide additional irrigation facilities to about 3.5 lakh hectares of land in Punjab and Jammu and Kashmir This is expected to yield an additional four lakh tonnes of food grains besides substantial quantities of cash crops like sugarcane, oilseeds etc. The increase in the industrial and agricultural produce due to this project is estimated to be of the order of 550 crore rupees per year. The project will practically eliminate the incidence of recurring floods downstream which in turn will help reclaim large tracts of valuable land on both sides of the river The Thein dam project will also have many indirect benefits which are of great socio-economic significance Since the reservoir area of the Thein dam lies in Jammu and Kashmir and Himachal Pradesh in addition to Punjab bilateral inter state agreements have already been executed by the Punjab State with the other two states.

The work on the project has been in progress, for some time. About seven thousand workers and one thousand engineers and other staff are working round the clock in three shifts under very trying conditions. The first Unit of the power plant is likely to be commissioned by September 1991. □

(Courtesy : Spotlight, AIR)

BOOKS

Flight of the tribals

Tribals : Islands of Deprivation : By Ramsharan Joshi, Published by National Book Shop, Delhi. Pages 196+xvi. Price Rs. 95.00.

With a Foreword by Bhupinder Singh and a preface (Pilgrimage to Island) by the author, the book is divided into two parts and contains a Bibliography and an Index. While Part I contains nine papers, Part II has only one under the caption, "Let us hunt, let us build a new village". The book is basically a compilation of papers and articles written by Joshi at different times and also published in popular journals. Naturally, the book suffers from methodological rigor and scientific precision.

"Tribals . Islands of Deprivation" presents a clear picture about Tribals who have been isolated over centuries and very little could be done for their social and economic upliftment. Indebtedness has been a part of their life which leads them to various forms of exploitation including alienation of their land. In addition, industrialisation has also affected their economy as the setting up of new industries in their areas dispossessed them of their ancestral land and they have been forced to become landless labourers With the influx of non-tribals into the tribal territory, there has not only been transfer of land from the tribals to the non-tribals, but this has also caused "loss of nerve" and has developed discomfort and discontentment in tribal life

The book brings out the condition of bonded labourers who have to suffer a lot. The rehabilitation schemes formulated to improve their condition have to be implemented more effectively If they are not rehabilitated simultaneously along with their release from bondage, they may even be deprived of a meal they get while in bondage.

The author brings out that "deprivation is always accompanied by dispossession, opression, dehumanisation, alienation and lastly silence". According to him, most of the maladies connected with deprivation can be taken care of through the technique of 'conscientisation" which the author calls "Hunt and Build Exercise"—HABE.

Dr. B. N. Sahay

Involving farmers in water management

FARMERS ARE TO BE INVOLVED in the scientific management of water in the country. According to a plan initiated by the Ministry of Water Resources, farmers' associations are proposed to be formed for the distribution of irrigation water and the maintenance of field channels. This will help achieve full utilisation of created potential and ensure that the benefits of irrigation percolate down faster to the beneficiaries.

The State Governments have been asked to take up on an experimental basis a pilot scheme in each Command Area Development Project (CAD) in every State. Under this scheme the farmers will be organised into outlet committees which can again be formed into minor associations. Water will be sold on a volumetric basis to the minor associations and outlet committees. The outlet committees in turn will distribute water to its members on a volumetric basis rather than on area basis to ensure equitable distribution. Initial seed money and managerial assistance in the form of grants will be provided by the Central Government and the State Governments on a matching basis.

The legal provisions for the formation of such associations already exist in the States of Maharashtra and Andhra Pradesh. It has been suggested that the Irrigation Acts which do not have similar provisions could be suitably modified.

At present water is being allocated without consulting fully the beneficiaries for whom it is meant. It has been recognised that the lack of involvement of the farmers in the CAD programme is one of the constraints in achieving full utilization of the created potential.

This scheme proposes to create a greater sense of involvement in the beneficiary farmers and help maintain the distribution systems as well as ensure prompt payment of water rates. This will also result in better water management and utilisation of created potential. □

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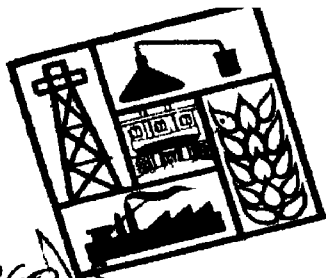
Labour policy in Seventh Plan

THE SEVENTH PLAN ALLOCATION for manpower planning and implementation of labour policy is Rs. 334 crore including Rs. 94.44 crore under the Centre, Rs. 219.75 crore for the States and Rs. 18.53 crore for the Union Territories.

The allocation provides for new centrally-sponsored schemes like upgradation of state government Industrial Training Institutes (ITIs) for improving the quality of training and replacement of obsolete machinery; grant-in-aid to State Governments for establishing ITIs for training and welfare of women; central assistance for upgradation of ITIs in minority concentration areas; work of monitoring environment in hazardous chemical industries in the States and Union Territories; and grant-in-aid to voluntary agencies for identification of bonded labour and also for projects for improvement of the conditions of child labour through a package provision of non-formal education, health care, nutrition and recreation.

The thrust of the labour policy will be on improvement in capacity utilisation, efficiency and productivity. The success of the labour policy will be adjudged on the basis of the productivity standard that it helps economy to achieve. Apart from technical factors discipline and motivation of workers, their skill, the state of industrial relations, the extent of effectiveness of participation of workers, the working climate and safety practices will form part of main thrusts of the labour policy in the Seventh Plan. While maximising employment generation to the tune of 40 million during the plan period against the expected total generation of unemployed manpower of 39 million, requisite attention will be directed to the improvement of labour productivity through the adoption of uptodate technology in productive process in major sectors and corrective measures for industrial sickness. A sound policy of tackling industrial sickness will be evolved which while protecting the interest of labour, would also take into account the fact that government cannot bear the huge burden of losses.

To obviate the need for strikes and the justification for lockouts industrial relations will be improved further. In the proper management of industrial relations, the responsibility of unions and employees will be identified to avoid inter-union rivalry and intra-union divisions. □

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MODVAT means refor
in economy

NEXT ISSUE

Spotlight on
environment

Foodgrains production targets for Seventh Plan raised

FOODGRAINS PRODUCTION by the end of the Seventh Plan is Planned to be raised to 183 million tonnes against 150 million tonnes in the Sixth Plan. Of this, the production of rice is estimated at 75 million tonnes, wheat 57 million tonnes, coarse cereals 35 million tonnes and pulses 16 million tonnes. Production of these items during the Sixth Plan period was 60 million tonnes, 45 million tonnes, 32 million tonnes and 13 million tonnes respectively.

Total production of oil-seeds is projected to reach 18 million tonnes during the Seventh Plan over 13 million tonnes produced in the Sixth Plan. The oil-seeds comprise groundnut (9.37 million tonnes) rapeseed and mustard (3.82 million tonnes), sesamum (0.74 million tonnes), safflower (0.72 million tonnes), niger (0.25 million tonnes), soyabean (1.28 million tonnes), sunflower (0.6 million tonnes), linseed (0.56 million tonnes), and castor (18 million tonnes).

Other crops like sugarcane, cotton and jute and mesta are targeted to reach production levels of 217 million tonnes, 9.50 million bales and 9.50 million bales respectively by the end of the Seventh Plan. These are against the production of 180 million tonnes of sugarcane, 7.50 million bales of cotton and 7.50 million bales of jute at the end of the Sixth Plan. □

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How to improve rural scenario faster

Sita Ram Singh

The only way India can advance speedily is by adopting a planning that helps faster uplift of the rural masses majority of whom still languish in abject poverty. Efforts made in this direction so far, according to the author, have not yielded the desired results. Reasons?—lack of commitment, and dedication and non-involvement, non-participation of the rural people. Voluntary efforts have been negligible. The huge expenditure on poverty alleviation programmes has not shown the positive impact. How to improve the rural scenario much faster, the author suggests various measures.

With the background of a record foodgrains stock, comfortable foreign exchange reserve and a distinctly higher annual growth rate of 5.2 per cent achieved during the Sixth Plan, the launching of the Seventh Plan (1985—90) constitutes yet another milestone in the nation's quest to rid the country of the scourge of poverty, ignorance and disease. It provides for the highest public sector out-lay so far of Rs 1,80,000 crore, which is nearly one hundred times the corresponding First Plan expenditure of Rs 1,960 crore. In the words of Prime Minister, Shri Rajiv Gandhi, "the Plan embodies the collective aspirations of the people as well as the commitment of the Government to achieve specific goals and targets."

Poverty alleviation, only aim

In keeping with the priorities of planning in India, the main thrust of the Seventh Plan is directed towards increase in foodgrains production, optimum employment generation and productivity, through technological innovation, thereby achieving a target of 5 per cent annual economic growth. The envisaged massive public sector outlay will help removal of backwardness and prepare the nation for the future. The various rural development schemes have been assigned 40 per cent of the total outlay, with emphasis on human resource development, for which a special allocation of Rs 1500 crores has been made. In the long term perspective (1985—2000), the Plan aims at reducing the percentage of the people below poverty line from the present 36.9 per cent to 25.8 per cent by 1989-90, which will be progressively reduced to 10 per cent by 1994-95, so that the nation may enter the twentyfirst century with a bare 5 per cent population below poverty line.

While hopefully sharing the optimism of achieving the Seventh Plan targets, this paper attempts to find an answer to the question "Could the process of rural development and alleviation of rural poverty have been accelerated?" and with the help of some official and unofficial published reports tries to locate the bottlenecks in effective implementation of various developmental schemes, and puts forth some humble suggestions in the light of this appraisal.

Efforts made so far

Inspired by Mahatma Gandhi's "constructive programme" and his ideal of "village swaraj", several States, notably Maharashtra, Madras and Uttar Pradesh had initiated programmes of rural development even before attaining full freedom. Poet Rabindranath Tagore had started his rural reconstruction work at Sriniketan in 1921. The other notable experiments were those of F. L. Brayne in Gurgaon (1920), of Spencer Hatch at Martandam (1921) and of V. K. Krishnamachari in Baroda district (mid-thirties). The experience of organising self-help in establishing re-

fugee township of Nilokheri (1947) by S. K. Dey and Etawah Project (1948) also made their contribution in the formulation of community development idea.

Community development

A realisation has been there since the very beginning of the planning process that no matter how fast is the progress in the field of industry, power, transport, etc., unless the rural areas progress with equal speed, the country can not make a real headway. As all aspects of rural life are inter-related, lasting results could be achieved only by handling them simultaneously. A comprehensive Community Development Programme (CDP) covering agriculture, rural industries, education, housing, health, recreation, etc., was therefore initially launched at 55 project centres on Gandhiji's birthday in 1952 to tackle the problem of rural areas in their entirety in a concerted and coordinated manner. The CDP thus formed the rural dimension of India's development planning This educational and organisational programme sought to create an urge among the rural people for better life and to show the way for satisfying this urge predominantly through self-help under a democratic set-up. Pandit Jawaharlal Nehru called it a 'revolutionary programme' and emphasised that "the importance of the programme does not lie so much in the material improvement that it may bring about, but much more so in its attempt to build up the community and the individual and make them the builders of their own village and their own life"

At the suggestion of Grow More Food Committee (1952), the CDP was supplemented by National Extension Service (NES) on October 2, 1953. For implementing the programme the country was divided into blocks of 100 villages each, comprising a population of 60 to 70 thousands and covering an area of roughly 250 sq. miles. Each Block Development Office (BDO) was assisted by eight technical experts known as Extension Officers (EOs) and 10 male and 2 female multi-purpose Gram Sevaks or Village Level Workers (VLWs) to carry the message of NES and CDP to the doors of the rural people. People's support and participation formed an integral part of the programme. In fact, to ensure effective participation of the people, a condition was laid down that for any item of work taken up under the programme a certain percentage should be contributed by the people in terms of cash, kind or labour. In the early stages, advisory committees of the local people were set up to assist the BDOs and EOs in formulating and implementing the programme. Later on these were replaced by Block Development Committees

The working of the programme during the First Five Year Plan showed that the people were sufficiently responsive to specific development programmes provided the administrative machinery arranged essential supplies and services and gave certain amount financial assistance. It was, therefore, decided to extend the programme to the entire rural population by the end of Second Plan. The U.N. Evaluation Commission on India (1958-59) initially categorised the programme as "one of the major experiments of the twentieth centry, whose results are of worldwide interest."[1] The CDP was responsible for successful take off of the Green Revolution in India.

Panchayati Raj

On the recommendations of Balwantrai Mehta Committee (1957)) a three-tier organisation of Panchayati Raj—consisting of Village Panchayat at the village level, Panchayat Samiti at the Block level and Zilla Parishad at the district level—was created in 1959 for effective rural development through people's participation. Under the scheme, the Gram Sewak or Village Level Worker (VLW) was to become the 'development secretary' of the village panchayat within his circle, comprising about 4000 persons. According to the Third Five Year Plan, "The establishment of these democratic institutions at the district and block levels and the role assigned to the Gram Sabha and the village panchayat constitute fundamental and far reaching changes in the pattern of rural development. The primary object of Panchayati Raj is to enable the people of each area to achieve intensive and continuous development in the interest of the entire population The responsibility for the implementation of rural development programmes will now belong to the block Panchayat Samiti working with panchayats in the villages and the Zilla Parishad at the district level."

However, under the delusion that village communities can easily overcome their deep divisions and work purposefully for the deprived among them, not enough attention was paid to educating the rural folks in democratic self-governance and strengthening the Panchayati Raj organs. The work at village level was virtually left in the hands of Panchayat Secretary, who was a paid government servant. Consequently the expectations that with the passing of the responsibility on the shoulders of the elected representatives of the people, the whole atmosphere would change, public response would be evoked and funds earmarked for the purpose would be utilised to the best possible extent were not borne out. On evaluating the actual working of the programme, the U.N. Evaluation Mission observed : "Many, perhaps the majority of the Community Development officials are, on the whole, out of touch with the village expectations. Officials regard their functions as being mainly to 'instruct' and to 'organise', and seldom to sit patiently and listen until the slowly-formulated realistic thoughts of the villagers come to the surface." Similar views were expressed in the reports of Programme Evaluation Organisation.

In the Community Development Ministers' Conference in New Delhi in 1963, Shri Ashok Mehta, then Deputy Chairman of the Planning Commission,

while giving his reaction to the study made on the working of the Panchayati Raj in villages near about Delhi, observed that the officials belonging to the Community Development Department were to blame for the abysmal ignorance of the villagers about this programme. At the same Conference, Prime Minister, Pandit Jawaharlal Nehru, the greatest well-wisher of CDP and Panchayati Raj in the country, remarked that the Community Development personnel were given to 'bossism' and the whole programme had "fallen into a rut."

Garibi Hatao programme

Instead of improving the organisational set up and making suitable changes in its implementation in the light of experience gained, the CDP was allowed to peter off in the mid-sixties. Thereafter, under 'Garibi Hatao' programme several schemes were introduced on experimental basis by the Central and State Governments. Some of these were· Intensive Agriculture Development Programme (IADP-1966), Small Farmers and Marginal Farmers Development Agencies (SFDA-1969), Marginal Farmers and Agricultural Labourers Agencies (MFAL-1971), Drought Prone Areas Programme (DPAP-1970), Hill Area Development Programme (HADP-1972), Command Area Development Programme (CADA-1974), Special Live stock Production Programme (SLPP-1975), Food for Work Programme (FFWP-1977). In April, 1978 an Integrated Rural Development Programme (IRDP) was started in 2300 blocks covered by SFDA, DPAP and CADP, with the object of lifting the poorest families in the rural areas— small farmers, marginal farmers, agricultural labourers, rural artisans, etc — above the poverty line a lasting basis by providing them with productive assets and employment

Integrated rural development

On October 2, 1980 the IRDP was extended to all the 5011 blocks of the country and made a major component of the New (Revised) 20-Point Programme. It has been further supplemented with programmes like Training of Rural Youth for Self Employment (TRYSEM-Aug. '79), National Rural Employment Programme (NREP-Oct. '80), Development of Women and Children in Rural Area (DWCRA-Sept. '82) and Rural Landless Employment Guarantee Programme (RLEGP-Aug. '83). The IRDP is being implemented through a net-work of District Rural Development Agencies (DRDA) headed by District Collector or Deputy Commissioner as Project Director and assisted by Block Development Officer (BDO) and a team of Assistant Project Officers (APOs) at the block level and VLWs at the village level. The IRDP allocation in the Seventh Plan has been fourfold increased to Rs 16000 crores, as against Rs. 4,500 crores in the Sixth Plan, which is to be shared by the Central and State Governments on 50 : 50 basis.

The IRDP is an all pervasive, multi-dimensional and comprehensive approach to development. It is a colossal effort involving extensive surveys, identification and assessment of all local resources and their judicious exploitation on priority for the ultimate improvement of the standard of living of the villagers covered. Considering the vast area and scattered villages, the programme requires a massive infrastructure and expertise in project formulations, implementation, monitoring and evaluation. The success of the IRDP would depend upon the team work at various levels, right from the various technical experts down to the equally heterogenous villagers.

An Evaluation

The latest (1983) National Sample Survey reveals that due to steady growth in agriculture, reinforced by special schemes to help the weaker sections, around 36 million persons have crossed the poverty line between 1977-78 to 1983-84

During the Sixth Plan period (1980-85), against the target of 15 million families, a record number of 15.4 million families, including 6.45 million belonging to scheduled castes and scheduled tribes, were assisted to cross the poverty line.

Wrong beneficiaries

The Evaluation Study Report on IRDP for 1983-84, spread over 16 States, released by the Programme Evaluation Organisation (PEO) of the Planning Commission, on 24th June, 1985, reveals that about 88 per cent of the 1163 selected household had increased their income, 77 per cent acknowledged increase in their consumption level, 37 per cent admitted some increase in their family assets, and about 64 per cent felt that their overall status in village society had been elevated. On the negative side, the study places on record that out of the 1170 sample households about 26 per cent were already above the poverty line in terms of the norm of annual income of Rs. 3,500|- laid down by the Ministry for identification of beneficiaries and hence, strictly speaking, did not qualify for provision of benefits under IRDP. In spite of the guidelines, only about 29 per cent of the target families were selected in the open meetings of the Gram Sabha and the remaining 71 per cent were selected by the BDO|Block level officials.

Lack of support

State level organisations, except in Gujarat and Rajasthan, and to an extent in Andhra Pradesh, lacked the required degree of support of the sectoral and subject-matter specialists in the formulation of projects and schemes and providing adequate technical guidance to the field staff. Most of the State Governments had not followed the guidelines issued by the Central Government in the implementation of IRDP. No efforts were made to prepare schemes suited to different areas. Officials at district and block

levels neither understood the economics of the schemes nor could master the mechanics for their successful implementation. Very little effort was put into finding out before sanctioning the schemes about marketability and income and employment generating potential of the projects. Nearly 29 per cent of the total sample household did not get full assistance to cover the entire scheme with the result the beneficiaries had to arrange additional finance from other sources, causing delay and increasing the interest liability. The report further adds that Rs. 25 lakhs were diverted from the IRDP funds in Karnataka for the construction of quarters for the Project Director and advances to the staff for the purchase of motor-cycles. Project officials in Himachal Pradesh utilised Rs. 38,000 to buy whisky, rum, bear, soda, tea and biscuits to entertain UNICEF team.

Lack of survey

The Report of the Comptroller and Auditor General on Kerala State for 1983-84 also reveals serious irregularities in the implementation of the IRDP and NREP. In the case of many IRDP projects, "no preliminary survey was conducted to assess the infrastructural facilities available", and the survey for identification of potential beneficiaries was "either not conducted or was defective", with the result that at least 3,500 families had misused the assistance provided under the programme In the various projects under NREP, the muster rolls of labourers showed them engaged on such non-existent dates as September 31, 1981 and February 29, 30 and 31, 1982. Out of nearly Rs 57 crores allotted by the State and Central Governments for the programme from 1981 to 1983-84, only about Rs 51 crores were utilised. The quota of foodgrains allotted by the Centre for the programme was not lifted

In Jammu district the C B I. found that the loans to the tune of Rs. 5 lakh disbursed under the IRDP by a local bank to buy milch cattle or start a small business had been pocketed by 'bogus beneficiaries'

No positive impact

During his rural tours of Madhya Pradesh, Rajasthan, Orissa and Kerala in July-August, 1985, to have first hand information whether benefits of development programmes reach the people they are meant for, Prime Minister, Shri Rajiv Gandhi, found that the huge expenditure incurred to alleviate poverty has not had a proportionately positive impact.

An ICCR-funded research project of two blocks in Nalanda district (Bihar) to determine the efficiency and enthusiasm of the IRDP functionaries (Yojana, Oct. 1—15, 1985) revealed that only 32 per cent of the beneficiaries came to know about the programme from the Village Pradhan, the VLW or Bank Manager, a mere 1 per cent from the BDO, and the remaining 67 per cent from other sources. 84 per cent of the beneficiaries selected the schemes by themselves without knowing the details of the programme. 37 per cent of the beneficiaries were unaware of the variety of schemes.

Most of the beneficiaries stated that selection for a scheme was based on their relationship with the officials 23 per cent of the beneficiaries had spent Rs. 50 for receiving help, 13 per cent between Rs. 50-100 25 per cent between Rs. 100-300, 30 per cent more than Rs. 300, and in some cases more than Rs. 700 by people who did not come in the targeted group. Though according to Reserve Bank instructions IRDP proposals ought to be disposed of in 15 days time, 70 per cent of the beneficiaries were sanctioned subsidy within 3 months after their final selection by DRDA, 11 per cent within 3 to 6 months and 19 per cent after six months After the schemes were sanctioned, VLWs did not meet 82 per cent of the beneficiaries, BDO did not contact 87 per cent of them, bank officials never visited them and no person from any other department came to enquire about their problems In sum, the beneficiaries received no follow-up assistance worth the name

Lack of infrastructure

One reason why anti-poverty programmes do not get off the ground here is the lack of infrastructure. The funds are there, the will is there, but in an under-developed State there is no effective machinery to implement the phenomenal number of projects. As a result about 60 per cent of the funds earmarked for development remain unspent.

Jain and Krishnamurthy (*Grass without Roots : Rural Development Under Government Auspices*, 1985) opine that both the earlier and recent field studies confirm that "even the specially designed poverty alleviation programmes are not reaching the poor Nor do they have sufficient depth to make an impression on poverty, let alone eliminate it. The delivery organisation is indifferent, if not biased, towards the poor due to the influence of corruption on an unprecedented scale This also explains why government functionaries have duped themselves into believing that they are actually helping the poor."

But still things improved !

From the foregoing it is self-evident that inspite of imperfect implementation of various projects during the last three decades of planning, the landscape of rural India has considerably improved and better results could certainly have been achieved There is sufficient allocation of funds, much of which is either misdirected or remains unutilised. While visible development has followed the tarmac, inaccessible rural areas are bypassed for development activity Multiplicity of programmes has also led to overlapping and confusion For example SFDA was merged into IRDP at the time of its inception, but Small and Marginal

Farmers Programme (SMFP) was started in 1983-84. Similarly, along side NREP, Rural Landless Employment Guarantee Programme (RLEGP) was started in 1983-84. Further, there appears to be no proper coordination in different schemes under IRDP, NREP and TRYSEM. The programmes are being implemented through not-so-well-trained and enthusiastic personnel, as a result of which hardly any participation by the people worth the name could be achieved.

People's participation

India's approach to planned development derives its inspiration from Directive Principles of State Policy included in the Constitution. The concept of people's participation in the development of the country is an integral part of the concept of Socialist, Democratic, Welfare State contained in the Preamble of the Constitution. Accordingly, the Community Development Programme did lay emphasis on people's participation right from the beginning. To start with, people's participation was confined to getting contribution from them in labour, cash, gifts of land and material for the works programme, such as roads, wells, irrigation schemes, school, houses, etc. The total money value of such contributions was given much importance in judging and comparing the performance of the blocks. Though the response of the people to carry out officially-sponsored programmes and to accept the recommended practices was encouraging, no follow up action was taken to ensure their gradual involvement in planning of welfare programmes. As a consequence the objective of converting the CDP from a "Government's programme with people's participation" into a "people's programme with Government's participation" could not become a reality.

Balwantrai Mehta Committee did focuss attention on developing people's organisations as a way of securing their effective participation in development programme, and the Panchayati Raj was carefully nurtured by Pandit Nehru. However, his successors doubted its utility and financial resources of Panchayati Raj Institutions were cut down and in most States Panchayat elections were either postponed or forgotten. As the official agency did not sincerely want to part with power and prestige by transferring initiative and leadership to the people's agencies and leaders, the idea of promoting self-reliance in the people was relegated to the background and they became more and more dependent on Government. For want of evolutionary growth in the character and significance of the concept of "people's participation", the development movement could not become a people's movement.

With Government help

At this stage it is necessary to clear any misconception that on active participation by the people in rural development the role of government agencies should go on diminishing until it almost ceases. In fact, the rural development movement will continue to have two partners for all time to come—the people and the agency of Government. As progress takes place, the role of the two partners will change and a new relationship will develop between them. To start with the Government agency will inevitably have to keep much of the initiative and leadership to itself. After gradual inculcation of initiative and leadership in the field of planning and execution of the programme increasingly into the hands of the people and their institutions, the government agency will remain important as an essentially advisory agency whose advice the people will always need.

No programme of development and material improvement can be accomplished, whether for the urban or rural areas, except through the application of science and technology. The people will require better advice as they become better informed, better organised and desirous of achieving higher goals of progress and prosperity. As the rural people's capacity to take advantage of science and technology is bound to be very limited, Government agencies will have to provide the processes and techniques through which the rural people can take advantage of science and technology.

Change-over takes time

The changeover from an attitude of heavy dependence on Government and outside agencies to one of self-dependence comes about rather slowly. It is not easy to make people change readily and rapidly. New ways of doing and thinking always create psychological insecurities among the people living near subsistence level. Then there is resistance from the conservative leaders of the community and custodians of the old ways of life, whose vested interests in leadership are threatened by the change. Promotion of change, therefore, requires very careful handling and needs willing workers who have both the knowledge of how change takes place and the skill to work with the people and induce them to change. The official functionaries have to work with patience, persuasion and firm conviction that progress attempted with the participation of the people will be more lasting than progress reached through benefits supplied from without. There is enough evidence of sociological research findings in various parts of the world, operating development programmes with varied content and under diverse political systems, that such a faith in the people is justified.

Better communication

The difficulty of fusing planning from above and planning from below can be resolved if care is taken to ensure people's participation at the local level and there is good and continuous communication between the national and local levels in the planning process. The central planners must know the needs and aspirations of the people, and when changes in local circumstances necessitate adjustments in centrally worked

out schemes without altering their purpose and objectives. The local people must know what opportunities open up from time to time through the execution of central schemes for the fulfilment of their local needs so that they can take advantage of them. It will hardly ever be the case that village communities show disinterestedness in any development programme. In such an eventuality the explanation will almost always be found either in that the nature of the measure proposed and its bearing on the life of the villagers has not been explained to them or that they are not yet ready for the measure or that some other needs which are uppermost in their minds must have remained neglected. A step in the right direction was taken by Madhya Pradesh Government by organising a two-week mass awareness convention in Durg to familiarise people with various rural and agricultural development programme of the Union and State Government and facilities provided by the Government under various schemes for improving the quality of life and work in the rural areas. It is for the first time that experts were to interact directly with block and village level workers and farmers. This exercise has to be made a recurring phenomenon at regular intervals by all the States. Better informed villagers will be able to not only demand their due but will also be less prone to exploitation by those who intentionally suppress such valuable information.

Role of Administration

The role of administration hitherto has been primarily executive and regulatory with coercive powers. The combination of development with regulatory functions has hampered the growth of the new attitudes of working with the people and of helping and educating them. Emphasis continues to be laid on getting things done somehow and showing physical achievements, but not so much on following of appropriate methods and developing the initiative and capacity of the people. There is need for more research into local problems, for better training and expansion of staff and for more emphasis on the use of local material and leadership. Mere surface expansion of the IRDP and intensification of the activities to speed up the execution of the programme will not be enough nor always the correct approach. There has to be greater emphasis on planning the local programmes in participation with the local people as distinguished from planning for the people. This calls for a big transformation in the role of government agencies, from one of maintaining law and order and directing the people to one of helping, educating and organising them and developing in them initiative, sense of responsibility and capacity to undertake tasks for themselves.

Lack of committed workers

It is evident from the various reports referred to above that majority of functionaries at block level are more equipped with theoretical knowledge and urban orientation, than an intimate knowledge of the rural people and their problems. The field workers are seldom consulted and, therefore, have no moral commitment in the work, nor do they take initiative to make themselves heard. They are willing only to make whatever show they can for the very occasional, well announced visits of VIPs, and the latter, in turn, are willing to accept this show. There is a considerable deception and self-deception all around except among the villagers who realise that not much is happening to benefit them. The aloofness of workers, their lack of interest in, and understanding of, the people's requirements and viewpoints, their lack of practical experience and their disinclination to do constructive work in the villages, are some of the causes of people's lack of faith and cooperation. The villagers, even though illiterate, know what their needs are and have the desire to satisfy them, which needs to be stimulated.

Just as the threads of Government activity emanate from one source at the fountain-head, so when they reach the village they must be collected together by the VLWs and presented to the villagers as a connected whole. As a friend, philosopher and guide of villagers, the VLW has to make them understand in their own language about the good things Government is providing for their benefit and guide them to avail of the same. He should endeavour to locate the villagers' troubles and suggest remedies on the basis of his general working knowledge of all the specialist departments. A sincere Gram Sevika has to actually join the village housewife in household work and induce her to change the mode of living, to adopt better methods of cooking, to keep the children clean, dispose of garbage in a hygienic way, etc.

Needing better-equipped VLWs

Hence, proper selection of candidates is more important in the case of VLWs than in the case of any other functionary. They must hail from the rural areas, not too different in their mode of living from those in whose midst they have to work and be keen to do their best to bring about a change in the living conditions of the villagers for the better. A bad VLW can do the most damage to the programme, as a good one can do the most good. It is, therefore, important that bad VLWs are weeded out as soon as possible. The VLWs are to be trained in keeping with their crucial role, their work has to be better defined and they must be relieved of less important work. Their number should be increased, they should be provided with sufficient incentives for their onerous duty, and honest and dedicated VLWs should be assured of accelerated promotion.

The block functionaries as a team have to develop and maintain a critical self-analytical attitude about themselves, about the programme and its accomplishments. This self-analysis can be done by asking such questions as, "Am I doing my work on the best possible manner ? What effect is the programme having on the people and is that what is aimed at ? Do I understand the villagers' mind ? How good are the methods and tehniques I am following and how best

can they be further improved in the light of experience gained ?"

Fresh initiatives

After his rural forays, the Prime Minister was convinced that the system of 'Giving loans and grants' is not an appropriate measure. Since then there is noticeable zeal for the welfare of the rural masses. The Prime Minister's Office is in active communication with the State Governments and Central Ministries and the monitoring schedules drawn up for the IRDP are being thoroughly scrutinised. The IRDP has been recast and the programmes of human resource development will be directed towards improving the ability of the people to participate in economic activity.

A high-power Committee in the Planning Commission is examining the question of improving the administrative machinery at the block level for the implementation of the IRDP. The Planning Commission has also asked all the States to strengthen Panchayati Raj institutions and the district planning machinery as effective instruments for implementing the two major plan objectives of poverty alleviation and employment generation in rural areas. The Prime Minister has further exhorted the voluntary agencies, which had a better direct contact with the masses in far flung areas of the country, to initiate people into developmental activities and also help in monitoring the progress and pace of development work in rural areas.

Role of voluntary efforts

As regards the call given to voluntary organisations to come forward and extend their help in development programmes, only self-less, independent and financially sound voluntary organisations can play their valuable supplementary role. Being free from rigid or externally imposed targets they will have greater flexibility in their working and can modify their programme schedules according to the local circumstances. They can liaise between the people and the government agencies best by keeping their responsibility and contacts confined largely to local fields, by keeping their approach completely non-propogandist and remaining free from Government influence and direction. However, these advantages are lost when due to dependence for financial support on government agencies they come under their indirect control and develop similar traits. Moreover, any greater zeal shown by the voluntary organisations or criticism of government agencies may be counter-productive in inviting the ire of the latter and the projects in their charge be by-passed or ignored at the first available opportunity. There is also the problem of accountability of voluntary organisations. As there are not many financially sound and selfless organisations in operation at present, the proper course is to envigorate the Panchayati Raj institutions and achieve an element of direct democracy in the functioning o[f] the Village Panchayats.

How to bring improvement

As democracy functions best at the level wher[e] everyone knows everyone else, the Gram Sabha mus[t] be activated to take interest in all important deci[-]sions-making and in the implementation of such deci[-]sions. The Panchayat members should realise that [it] is only for convenience of effective functioning that the[y] have been given some powers and functions and it i[s] to the Gram Sabha that all powers ultimately belong

The Village Panchayat, the Village Co-operative and the village schools have to be strengthened as th[e] three basic institutions of the village. The Panchaya[t] is to function as the civic and developmenta[l] authority, the Co-operative in the economic spher[e] and the village school in intellectual, vocational an[d] cultural spheres. Other organisations of women, youth farmers and artisans should be linked with the Pan[-]chayat organisationally and financially so that they ca[n] help the Panchayat in development work.

Statutory provisions need to be made in Panchaya[t] Raj Act for making elections to Panchayats compul[-]sory at regular intervals as in the case of State legis[-]latures and Parliament, and for quarterly meetings o[f] the Gram Sabha, as against at least two in a year a[t] present At these meetings the Gram Sabha will iden[-]tify the poorest of the poor families for appropriat[e] assistance, discuss progress reports, developmen[t] plans, budget and tax proposals The frequent holdin[g] of Gram Sabha meeting will create in the villagers sense of participation in the management of th[e] affairs of their own village. It will not only strengthe[n] the hands of Panchayat, but also act as a brake o[n] any arbitrary action by the Panchayat, for the mor[e] well-informed the village people are, and the mor[e] interest they take in Panchayat activities, the mor[e] responsibly that body will act It is very likely tha[t] in the early stages the meetings of Gram Sabha wil[l] not be well-attended, and may be dominated by con[-]servative Panchayat members or by those who belon[g] to a rival faction But all this has to be gone throug[h] if the people are to be educated in direct democracy

Another important provision to be made in th[e] Panchayat law is for 'recall' of Panchayat member who by their conduct forfeit the trust of the electorate. Some Panchayats will comparatively work bette[r] than others as a result of dedication and selfless wor[k] of elected Panchayat members. The people in neigh[-]bouring villages will notice the difference and lear[n] how to choose right type of representatives in th[e] next election.

Education of adult rural population about citizen[-]ship and democracy is, therefore, as important a[s] teaching them to read and write. This kind of educa[-]tion can be given to a limited extent through grou[p] discussions, study camps, T.V. programmes, involve

(Contd. on p. 19)

What fails rural development

Suraj Pal Singh

The author here discusses the failure of rural development programmes, its causes and cures. According to him, no noticeable improvement in the condition of rural population has taken place during the last 33 years although the statistics provided by the Planning Commission revealed poverty line having come down to 37 per cent in 1984-85. He suggests, among other things, reorganisation of the present planning units and formulation of development policy for each Panchayat as a Primary unit to step up rural welfare.

From Community Development Programme to integrated Rural Development Programme, continuous efforts for rural development have been made in the country since the beginning of planning era in India. Between these two programmes many other programmes like IADP, IAAP, SFDA|MFAL, DPAP, etc have been outlined and implemented in Five Year Plans. They represent that a planned process is in operation to enhance the economic and social status of the rural poor.

In spite of continuous efforts of past 33 years no noticeable improvement in the condition of rural population had taken place. It is evident from the statistics provided by the Planning Commission that 37 per cent population lives below the poverty line by the end of 1984. It cannot also be asserted that Indian villagers shirk their work or do not aspire for their progress and prosperity. Indian farmers are so industrious that they can irrigate their Rabi Crops by fetching the ice-cold water of canals during the chilly winter nights.

Now the question arises why the economic state of the villagers has not yet improved despite long drawn efforts. Rural Development Programmes were repeatedly framed but the desired objectives were never attained. Obviously, the programmes could not benefit those for whom they were formed. A few undeserving persons went on deriving benefit from these programmes and became prosperous.

The failure of these programmes in attaining the set objective requires a serious thought. It has been a debatable subject since long. Some observe that the basic framework of the programmes is defective, others think that programmes are not earnestly executed, while some others consider the deficit of budget responsible for the failure of these programmes. These are all lofty thoughts. I have been in touch with the rural environment since my birth. In the capacity of a research scholar I have minutely studied the factors responsible for the failure of these programmes. They are enumerated as under :

Unfeasible block level planning

Most of the programmes for rural development have been framed after considering the development blocks as a unit It has been observed that different types of resources, problems, needs and skills are found under the small administrative unit like development block. In other words spatial variations are found in the distribution of these factors, under a development block. In fact, internal homogeneity is not there in the development blocks. The lack of areal generalization is generally found in these development blocks. On account of which the various, parts of these development blocks fail to play identical roles under a functional system. The formulation of rural development plan, with the consideration of blocks

of internal heterogeneity as planning units is not feasible.

It has been generally observed that with the reduction of the area of a region, the variation in resources, problems, needs and skills become minor. The study of an area of 5-6 villages clearly reveals the presence of internal homogeneity in that area. It is also evident that many such homogeneous areas are found under small administrative units like development blocks. Areal generalisation is also found in such area. All the villages of these areas seem to function identically in a functional system. Under these circumstances, block level planning is not practicable for rural development. Spatial development plans will prove beneficial for the village clusters functioning identically in a functional system.

Malpractices

Malpractices prevalent in rural areas are also respossible for obstructing the desired results. V.L.W. Lekhpal and Panchayat Secretary are the bottom level workers. They are directly involved in achieving the organizational targets. The role of these bottom-level workers is quite significant in rural development. But it is distressful that they are not cautious about their roles and responsibilities. Most of them are found involved in the exploitation of the villagers. Besides, the employees of other development agencies are least careful about their duties. The Livestock Development Assistant (L.D.A.) enjoys french leave Controlled Commodities like Sugar, and Kerosene oil are distributed dishonestly and irregularly School teachers can be seen dozing instead of teaching during their duty hours. Black-marketing of medicines, supply of spurious fertilizers, seeds and pesticides, bargaining and haggling in loan sanction, lack of continuous supply of fertilizers, seeds and pesticides, poor labour charges, delay in payments of sold agricultural commodities like wheat and sugarcane are other examples of the malpractices which directly or indirectly affect the progress of rural public. On account of the lack of immediate supervision these agencies do not function properly. Consequently, benefits of different development schemes proceed to the specialised section of rural community, the needy section of the society suffers silently.

The hindrances of distance, etc.

The excessive distance between the service centres and their service-areas create obstruction in the balanced development of rural areas. Loose administration and ignorance of rural public are related to distances and give rise to corrupt practices. Public ignorance increases in proportion to the gap in distance and administration will be affected accordingly. It has been marked that those places which are situated in the immediate vicinity of district headquarters, *tahsil* headquarters and block headquarters receive better services than the distant places. The lesser the distance between the service centres and their adjacent places, the better the hold of the administration on the services. Besides, the public of the adjacent areas maintains a daily contact with these centres. Thus, the public remains conversant with various development schemes. Consequently, the public of the adjacent areas does not become a prey of corruption as much as the public of distant places. Adjacent areas are benefited by the schemes more than the far flung areas

Lack of a primary planning unit

Nyaya-Panchayats, which consist of a group of villages, are functioning as a primary unit-areas for development below block level The Nyaya-Panchayat Kendras are designed to function as central villages through which rural development programmes could be carried out. It is observed that the villages are grouped haphazardly because the Nyaya-Panchayats are formulated on the population criterion alone; distances between Nyaya-Panchayat-Kendras and their constituent villages are not so reasonable from which villagers can come and visit and take all the facilities neither the quality nor the quantity of services provided at Nyaya-Panchayat-level are sufficient to meet rural community needs in the present changing co ditions; in many cases, Nyaya-Panchayat Kendras and services are and located at proper place, benefits accrued only to some persons who live in Nyaya Panchayat Kendras without touching the populatio of all constituent villages—the unit as a whole is not viable

The core tasks of rural development

The earlier programmes for rural development hav not yielded the desired results not only due to th lack of a viable primary planning units below bloc level but also as a result of the absence of a clear cu course of action at grass-root level. The core task of rural development consist in the fuller use of loca resources and skills, modernisation of farming regeneration of village level non-agricultural an allied to agricultural activities, building institution to fulfil the local needs, eradication of major develop ment problems and improvement in health and edu cation. For the accomplishment of these core task of rural development the primary planning unit need strong internal links built up in the course of actio for rural development which rewards all, particularl the weak and the poor. Besides, the nature, qualit and endurability of rural development achieved depend primarily on how well the primary plannin units function. For the smootn functioning of primar planning units, a clear-cut-course of action is requ red at grass-root level.

Remedies

Indeed, rural development needs planning a grass-root level. It requires an arrangement by whic

(contd. on page 19

Giving a fresh look at development of backward regions

(A case study)

V.S. Singh

The author here discusses the special problems facing the development of the Bundelkhand region of Uttar Pradesh, efforts made to raise its economy, potential for developmentnand the need for regional planning. He suggests a strategy aimed at scientific management of resources for faster development of the region. He feels not only investment needs to be raised substantially, but the national policy on development has also to be reoriented to achieve a breakthrough in reducing inter-regional disparities

THE PROBLEM OF REGIONAL DISPARITIES in the level of development has been baffling most of the countries in the world. While the affluent nations are worried over the growing imbalance in prosperity between different parts of their country, the developloping nations are more deeply concerned with it for they have to find out resources to provide minimum basic needs for a large population living below subsistence level and concentrated in such backward areas of regions. About 47 per cent of the population of our country is estimated to be living below poverty line and this part of population hails mostly from such pockets which are deficient in industrial and agricultural growth and which do not provide a diversified economic base so as to be able to provide employment opportunities for the people. The problem of poverty in our country is, therefore, directly related to the backwardness of regions or, in other words, to the regional disparities. Thus, any effort to remove the regional disparities or to ensure a balanced regional development would definitely help in eradication of poverty. Balanced regional development, which implies the accelerated development of backward regions, is essential not only in the interest of the less developed areas but is necessary in the larger interest of the country, as a slow growth rate of these regions obviously acts a drag on the economic development of the entire country.

Reduce regional disparities

The need for regional planning for backward regions is often emphasised on the basis of equity and justice. It is necessary, however, to realize that the reduction in regional disparities and acceleration of the rate of growth are not conflicting but complementary to each other in the long run. It is equally important to realize the fact that as the objective of planning is to lift the per-capita income of the backward regions to a specified level of adequacy within a specified period, even the money cost of attaining this objective is higher the more inequal is the distribution of economic activity in between the various regions of the economy. In other words, the total investment effort needed for development will be higher if the intra-regional disparities are larger, and lower if the intra-regional disparities in per-capita income are smaller. Reduction of regional disparities, thus, occupies the the key role in the development of the economy in totality.

Accelerated development of backward areas and balanced regional development has been one of the

basic objectives of the Central and also of the State Plans, since the very beginning of the planning era. The first two Five Year Plans, though did not specifically mention the policies to be adopted, which may be instrumental in reducing the regional imbalances, a number of projects were included for particular areas of different States having difficult problems to face. In the Third Plan it was, however, realised that the main lacuna of the regional planning efforts in the earlier Five Year Plans appeared to be that benefits of development programmes could not diffuse over a larger region and consequently the rural areas still remained undeveloped or under-developed. The Third Plan for the first time clearly enunciated the policy to be followed for regional development, which was as follows:

> "In each region, the nature of problems and the impediments to rapid development in particular fields should be carefully studied, and appropriate measures devised for accelerated development. The essential object should be to secure the fullest possible utilisation of the resources of each region, so that it can contribute its best to the national pool and take its due share from the benefits accruing from national development."

The Fourth Plan, while emphasising the importance of balanced regional development, stated that, "Growth and diversification of economic activity in an under-developed area can take place only if the infrastructure required for this is provided in an adequate measure and programmes for conservation and development of natural resources undertaken". The Sixth Five Year Plan (1980--85) envisaged a progressive reduction in regional inequalities in the pace of development and in the diffusion of technological benefits. "The Approach to the Seventh Five Year Plan (1985—90)" document brought out by the Planning Commission, Government of India, stated that the problem of regional disparities in development has to be tackled at different levels. Part of the solution lies in the development of agriculture in the less developed regions. However, it is a much wider problem and its resolution requires a close re-examination of the mechanisms for channeling the flow of finance, policies on industrial location, the distribution of investments in irrigation and infrastructure, and a host of other matters. It is essential that the regional dimension of development is dealt with as an integral part of the Seventh Plan.

The case of Uttar Pradesh

Uttar Pradesh is one of the relatively less developed States in the Country. Within the State also, there is much disparity in the levels of economic development of different regions. For purposes of planning and development, the State is divided into five economic regions by grouping contiguous districts having similar cropping pattern, population density, geo-physical conditions and agro-climatic factors. These regions are : (1) The Eastern region, (2) The Hill region, (3) The Bundelkhand region, (4) The Central region, and (5) The Western region.

Out of these five regions, three regions, viz., the Eastern, the Budelkhand, and the Hill have been recognised by the State Government as relatively backward on account of considerations like low productivity, high or low density of population, type of terrain and topography, inadequate infrastructure, and recurrence of natural calamities like floods and droughts, etc. Thus, Bundelkhand region is one of the three recognised backward regions of the State.

Bundelkhand Region

Bundelkhand region comprises five districts of Jhansi Division, i.e., Jhansi, Jalaun, Hamirpur, Banda, and Lalitpur. These districts of this region have parts of their boundaries common with the state of Madhya Pradesh. The population of the region, as per 1981 census, is 54.29 lakhs, constituting 4.9 per cent of the State's population. The region is not densely populated. The density of population (1981 census) is 185, as against 377 for the State. The population of scheduled castes and tribes is 25.6 per cent of the total population, which is higher than the corresponding percentage (21.4 per cent) for the State. Agriculture is mainstay of the population, as 78.45 per cent of the workers are engaged in agriculture. The percentage of agricultural labourers (21.18 per cent) is higher in this region than that of the State as a whole (16.32 per cent).

The socio-economic backwardness of Bundelkhand region is due to certain special problems, such as low productivity, great paucity of roads, poor accessibility to rural areas, acute shortage of drinking water in large tracts, existence of vast areas under culturable waste, very inadequate irrigation facilities, and almost negligible industrial development. Despite comparatively large holdings possessed by households, productivity is much lower than the State average.

The low agricultural productivity is a consequence of soil characteristics and inadequate availability of irrigation. The topography of the area being plateau and rocky makes the land less moisture training and unsuitable for intensive cultivation. The soil is, by and large, rocky and possesses less soil cover, resulting in low productivity. Besides, the agricultural crops are damaged by stray cattle which are left loose by their owners due to non-availability of fodder with them. This adversely affects the crop production in the region. In addition, the region is having widespread problem of deep ravines, which make the area unsuitable for cultivation. These ravines also provide hideouts to gangs of decoits and other anti-social elements. An area of 2.82 lakh hectares is reported to be under ravines.

All the five districts of the region are frequently hit by severe droughts and have been declared as

"Drought Prone Districts". In only one year, i.e. 1981, the loss was of the order of Rs. 11.43 crore and the area affected was 4.02 lakh hectares. The recurrence of droughts not only causes huge damage to agriculture but also saps incentives of the cultivators to adopt improved agricultural practices. Moreover, the State Government has to incur heavy expenditure on relief measures, which could otherwise have been invested in various development projects to boost-up the economy of the region.

Drinking water problem is quite acute in this region. The number of scarcity villages in the region constituted 38.5 per cent of the total inhabited villages. The problem is further aggravated in Pathari areas, where people have to cover long distances just for fetching water for drinking purposes or as an alternative take the recourse to drinking contaminated or unhygienic water, which results in the spread of water-borne diseases among the population.

The problem of unemployment and under-employment is acute in Bundelkhand region. It has been estimated that the total number of chronically unemployed and inadequately employed persons, as percentage of the population in the age group of 15—59 years (in March 1981), was 6.20 in this region as compared to 4.9 per cent in the State.

Within the Bundelkhand region itself, the problem of chronically unemployed and inadequately employed was more pronounced in Hamirpur district, where the percentage was 6.67, as against 6.07 per cent in Banda, 6.2 per cent in Jhansi (including Lalitpur) and 5.78 per cent in Jalaun district.

Improving the economy

In conformity with the State policy of reduction of regional disparities, comparatively higher outlays were allocated to the schemes benefiting the three backward regions, including Bundelkhand since the Third Plan and this process continued with added emphasis in the successive Five Year Plans. Besides allocating higher outlays, special schemes and projects, in addition to normal programmes of development, were included in the Third Five Year Plan and succeeding ones, suiting to the needs of Bundelkhand area and optimally utilising its potentials In order to accelerate industrial development all the five districts of the region have been selected by the Government of India, where concessional finance is made available through financial institutions. Besides. Jhansi and Lalitpur districts have been selected for giving outright grants and subsidy to entrepreneurs for setting up industries. Out of five districts of the region, three districts. viz., (1) Banda, (2) Hamirpur, and (3) Jalaun have been declared 'Zero Industry' districts. In order to promote industrial development in these 'Zero Industry' districts, a subsidy of 25 per cent on fixed investment on land, buildings, machinery, etc., subject to a maximum of Rs. 25 lakhs, is admissible to units set up in these districts. A special capital subsidy of 15 per cent, subject to a maximum of Rs. 15 lakhs, is admissible to 'pioneer units', set up in a 'Zero industry' tehsil where no central investment subsidy is available.

The amount of this subsidy is 5 per cent, subject to a maximum of Rs. 5 lakhs, in districts attracting 10 per cent capital subsidy; and no State subsidy is payable in such a district, where central investment subsidy of 15 per cent or more is available. There is an exemption from sales tax for a period of seven years for the industries set-up in 'Zero industry' district. Since October, 1980, the National programme of I.R.D. has been sanctioned which, spread over in all blocks of the region would help reduce the inter-segmental disparities among the rural population in the long run.

For mobilising institutional finance and undertaking commercially viable projects in the region, Bundelkhand Vikas Nigam has been established. The Nigam is expected to act as a catalyst in the development of this region. An apex planning body, "The Bundelkhand Vikas Pradhikaran" has been established under the Chairmanship of the Chief Minister. The Pradhikaran has been vested with financial powers and necessary funds are allocated to it for launching of development programmes of the region. The main functions of the Pradhikaran are to undertake detailed review of various development programmes from time to time and take decisions on broad policy issues, in order to accelerate the growth in the region.

With the introduction of the process of distribution of district sector outlays amongst different districts, under the decentralised planning which is in operation in the State since 1982-83, the districts falling in the backward regions are entitled to larger share in outlays as compared to their percentage share to the total population. The divisible district sector outlay is distributed amongst various districts according to a formula, based on the population and level of development. The decentralised planning process, implemented in the State since 1982-83 has, thus, resulted in larger flow of resources to Bundelkhand region as well as other backward areas of the State.

The formula adopted for distribution of divisible sector outlay would also help, over a period of time in reducing the inter-district disparities in the region.

Potentials of development

The balance underground water is available in large quantities, which can be tapped for creation of additional irrigation potential In April 1980, it was estimated that the balance underground water in the region was 78.69 per cent, which is much higher than the State percentage of 65.69.

Though balance underground water is sufficiently available in the region, it is comparatively difficult to ensure its optimal utilization in view of rocky strata and heavy boring costs. However, with the introduction of latest techniques of remote sensing and using deep boring rig machines, it is now possible to instal State and private tubewells in the Bundelkhand region. As an illustration, it may be mentioned that prior to the year 1981-82, there were only two State tubes-wells in Jhansi district. With the exact sites located by Remote Sensing techniques, 38 new deep borings were successfully accomplished. However, with this note of new optimism, huge investments are needed to explore the locations throughout the region for the installation of deep bored State and private tube-wells, to ensure an optimal utilisation of underground available water resources.

Bundelkhand region is rich in minerals. The important minerals found in Bundelkhand region are : copper in the district of Jhansi ; Pyrophyllite in Jhansi and Hamirpur districts ; Graphite in Hamirpur district ; iron ore in Jhansi district ; and Bauxite, Burmiculite and Silica sand in Banda district. Besides, Pyrophyllite, building stone, soapstone and granite stone are found on a large scale in Lalitpur district. In this very district Rock Phosphate deposits are also available.

An extensive exploration work carried out by the Geological Survey of India and the State Directorate of Geology and Mining, U.P., has revealed the magnitude of the main minerals and metallic ores found in the Bundelkhand region. Details of this are given below :

Sl. No.	Mineral/Metallic ore	Reserves (in Lakh Tonnes)	
1.	Bauxite .	84	
2.	Silica Sand . . .	245	(including that of Shankargarh)
3.	Pyrophyllite and Diaspore	3	
4.	Rock Phosphate . .	50	

For utilising this natural endowment of the area, the Mineral Development Corporation, U.P., has prepared projects involving an expenditure of Rs. 130 crore, but these could not materialise so far because of non-availability of funds. These projects are :

	Name of the Project	Total cost (Rs. in crore)
1.	Float Glass Projects of U.P. State Mineral Development Corporation (UPSMDC), based on Silica sand deposits—Banda District .	120
2.	Rock Phosphate beneficiation Project of — U.P.S.M.D.C.—Lalitpur District	10
	Total	130

As pointed out earlier, the industrial sector of the region is too inadequately developed. The exploitation of the minerals, which are locally available in large quantities, and establishment of industries based on these minerals can go a long way in boosting up the industrial development of the region. But the non-availability of required financial resources is the main stumbling block in exploitation of these mineral deposits of the area.

A striking feature of land utilisation in Bundelkhand region is the existence of vast tracts under culturable waste. In 1981-82, 3.12 lakh hectares were under culturable waste, constituting 10.5 per cent of the reporting area. The total culturable waste area in Bundelkhand region constitutes 27.8 per cent of the corresponding area in the State. Such a large area under culturable waste is a good potential for agricultural development by bringing this land under cultivation after treating it, which obviously involves huge financial investments in the initial stages.

Strategy of development

The strategy of development of Bundelkhand or any backward region should first of all envisage scientific management of resources and provide adequate work to the mass of workers in the region. The emphasis has to be shifted from "acceleration of rate of growth in aggregate income to lifting the levels of living of the people". The development process will have to be so organised that the levels of productivity and consequently the incomes of mass of workers in the region experience steady increase, period after period. The kingpin of formulation of the strategy of development is the examination of the process of economic development and identification of technical and structural factors responsible for the growth or the non-growth of the economy. The development strategy mentioned below has been framed taking into consideration the natural endowments, development potential and special problems of the region; and the main theme of the strategy is the maximum utilisation of resource endowments and resolving the special problems of the area. •

Investment is the sine-qua-non of economic development. The rise in the standard of living depend[s] primarily on the magnitude of investment. Th[e] investment, whether it is through Central|State Gov[ernment] or private agencies|individuals, will have thus, to be considerably augmented to pull the masse[s] from the morass of backwardness. Besides Govern[ment] investment, private and financial institutions investments will have to come in big way for thi[s] area. In allocating funds among different sectors within the available State resources, it has to be kep[t] in view that the size of development programme o[f] the sector in a region, which is relatively less deve[loped] in that respect, is substantially enhanced. I[n] view of the enormity of special problems faced b[y] the economy, coupled with untapped resource, th

economy would require considerable augmentation of investment. The programmes to be included in the plan have necessarily to be based on the felt needs and should be able to solve the special problems of the area. The nature of the problems and impediments to rapid development in particular fields will have to be carefully studied and appropriate measures deviced for accelerated development. While including the programme of development in the plan, care has to be taken to ensure that the potentialities of different areas of the region are exploited to the maximum.

Besides, it has also to be worked out how the optimal balancing of the macro and micro linkages of programmes could be obtained. The strategy of development will have to take into consideration as to what pattern or growth and programmes are the appropriate ones for different areas of the region. As an illustration, it may be pointed out that the problems of Jalaun district are entirely different from other districts of Jhansi Division, and this has necessarily to be taken into account while framing the strategy of development of the region.

Sectoral strategy

The sectoral strategy that needs to be adopted for the development of Bundelkhand region is briefly spelt out below :

(1) In designing agricultural programmes well suited to this region, the basic fact that has to be kept in view is that Bundelkhand region should not be treated as a homogenous region for this purpose. The entire area of the region can be classified into two categories, viz., (i) having alluvial soil, and (ii) not having alluvial soil. Agricultural programmes suited for the aforesaid first category would, obviously, be different from that for the second one.

(2) About 6 lakh hetares of land has been classified as cultivable waste, as per revenue records. But the fact is that large portion of this area is not suitable for cultivation. It has to be examined in detail as to how best use of this area can be put to for productive purposes.

(3) Massive efforts are needed to increase the yield per hectare in the area, which is the lowest among all the regions of the State. Cultivation of oilseeds and pulses should be taken up on an extensive scale in order to raise the cropping intensity and also help in overcoming the deficiencies of production of these commodities.

(4) Taking into consideration the rocky topography and typical soil, having much lesser capacity of moisture retention and irrigation works being too costly, dry farming is much suited for the area and should be practised on an extensive scale. The National Bureau of Soil Survey and Land Use Planning, Nagpur, has spelt out in its study Report entitled, "Land Use Plan for Development of Bundelkhand Region", the desired dry-land agricultural technilogy that need to be adopted in the region.

(5) Recent technological advancements have proved that suitable watershed management techniques can conserve water and moisture in large quantities to meet the requirements of arable farming. The agricultural production of this region can be enormously increased by adopting latest techniques of watershed management in the region.

(6) In view of vast areas available for grazing, sheep development on a massive scale is a distinct possibility and can provide a source of livelihood to a sizable section of the population. The programme has an added advantage that it would not need much investment and can be effectively organised through the existing financial resources available under the I.R.D. programme.

(7) Bundelkhand offers a strong case for coverage of more areas under forests. More than six lakh hectares area is reported to be under culturable wastes. This vast area can be safely brought under afforestation. Another reason supporting the case of Bundelkhand is very low percentage of area under forests in the region. The land utilization statistics reveal that forests occupy only 8.3 per cent of the reporting area, as against the norm of 33 per cent prescribed for the purpose. Under afforestation proposals, the main point that needs to be kept in view is that at present in the forest lands the plantation policy is mainly designed for purpose of timbers, firewood and other minor forest produce. There has been little plantation of fodder trees which may also be good fuel yielders. It would be, therefore, worthwhile to consider that fodder development should also be included as a crucial variable in the forest plantation policy.

(8) Horticulture in this area can be developed on commercial lines. Efforts should be made to maximise the production of citrus fruits, vegetables, green peas, ginger and other spices, which are in great demand in the nearby Kanpur Metropolitan and Babina Cantonment Area.

(9) The region is having a considerable population of milch animals but in view of indigenous breed, the

...... is .... low. An acute scarcity of fodder, besides severely affecting the yield of existing milch livestock, also dissuades cultivators for going for improved breeds of cattle. It is suggested that those chunks of culturable waste which cannot be brought under afforestation, should be developed into pasture lands. More emphasis should be laid on the cultivation of fodder crops and perennial grasses in collaboration with the Central Grass Land And Fodder Development Research Institute, Jhansi.

(10) The severe menace of deep, medium and shallow ravines should be arrested by adopting suitable agricultural engineering and soil conservation methods. This will not only bring additional area under agriculture but would also go a long way in mitigating the serious problem of law and order created by various gangs of dacoits and other anti-social elements.

(11) Irrigation facilities need to be substantially increased. State and private tube-wells may be installed, as it is now possible to instal these works with the introduction of latest techniques of remote sensing and using deep boring rig machines (like In-well and D.T.H. Rig Machines). Additional irrigation potential can be created considerably through optimal utilization of balance underground water, which is available in large quantities in the region.

(12) By constructing more Check-Dams on "Nalas" and developing micro watershed areas and construction of more "Bundhies and submergence Bundhies" large areas can be brought in the irrigation fold.

(13) The industrial development of the area can be boosted up by establishment of industries based on minerals, which are locally available in large quantities.

(14) The Bundelkhand region has great paucity of bridges which inhibits its exposure with inside and outside towns and market centres. There is, thus, imperative need of constructing a number of bridges over important rivers so that there may be speedy inflow and outflow of passenger and goods traffic, within and outside the region.

Conclusion

The importance of raising the economy of backward regions including Bundelkhand, resulting in reduction of regional imbalances, which is not only in the interest of respective regions but for the nation's economy also, cannot be over-emphasised. Though in each of the successive Five Year Plans, the subject of accelerated development of backward regions finds a prominent place in the set objectives, the efforts made so far have touched only the fringe of the problem. The problem of developing the less developed areas, so as to catch-up the levels of developed ones, is so enormous that the Central Government has necessarily to come up in a big way to make huge investments in these areas to boost up their economy. Not only a substantial raising of the investment is necessary but what is more essential is the reorientation of the national policy, which may result in real break-through in reducing inter-regional disparities and accelerating the development of backward areas. So far as the role of the State Governments is concerned, it should be appreciated that the development of different regions and of the State's economy as a whole, have to be viewed as parts of a single process. The progress of the State's economy will be reflected in the rate of growth realised by different regions and, in turn, greater development of resources would contribute towards accelerating the rate of progress for the State as a whole. The fact that the accelerated development of Bundelkhand and other backward regions, viz., Eastern region and the Hill region in U.P. is also in the larger interest of the economy of the State cannot be over emphasised in as much as the depressed economy of these regions, which account for 46.7 per cent of the population and 56.5 per cent of the area of the State, would obviously act as a drag on the development of the State's economy as whole.

APPENDIX-I

Important indicators showing socio-economic backwardness of Bundelkhand region

Indicator	Bundelkhand region	State
1	2	3
1. Decennial growth of population (1971-81)	26 52	25 49
2. Percentage of workers (1981)		
(a) Cultivators and agricultural labourers	78 27	74 55
(b) Household industry, manufacturing, processing, servicing and repair	3.15	3.69
(c) Other workers . .	18.58	21.76
3. Intensity of cropping (1981-82)	110.67	143 29
4. Per-hectare consumption of fertilizer (in Kg.) 1982-83 . . .	17.28	57.62
5. Gross value of agricultural produce per hectare of net area sown, in Rs. (1980-81)	2430.03	4619 28
6. Percentage of area under forests to total reporting area (1981-82) .	8.10	17.25
7. Percentage of net irrigated area to net sown area (1981-82) . .	21.00	55.19
8. Percentage of gross irrigated area to gross cropped area (1981-82) .	20.55	46.91
9. Percentage of electrified villages to total inhabited villages (1983-84) .	37.78	51 99
10. Number of workers in registered industrial establishments per lakh of population (1980-81) . . .	184	697
11. Percentage of manufacturing sector of total net output at current prices (1980-81)	11.12	18.52

1	2	3
12. Length of pucca roads per 100 sq. Km. (March 83) (in Km.)	16.1	22.5
13. Literacy percentage (1981)		
(a) Total	28.69	27.16
(b) Male	41.78	38.76
(c) Female	13.95	14.04
14. Credit deposit ratio (June, 1982)	36.27	47.42
15. (a) Percentage of scarcity villages covered by piped water supply (March, 1983)	46.71	40.56
(b) Number of scarcity villages (March, 1983)	1497	21105
16. Population per bank branch (in'000) (1981-82)	16.86	16.39

☐

(Contd. from page 10)

ment of educated village youth, etc. But real understanding will come only through actual participation in the activities of the Panchayats, Cooperatives and associate organisations of youth, women, farmers and artisans. This aspect should form an importnt part of human resources development programmes.

The experience of over three decades has shown that Government efforts alone will not be able to eradicate poverty and ensure spedy uplift of the downtroden. Communities may do slightly better. But without social unity and participation by the poor themselves, it is very doubtful if the development programmes will be able to achieve the long term perspective targets of reducing the percentage of the people below poverty line. Prosperity, like liberty, will not descend on the people. The people must raise themselves and earn this blessing before it can be enjoyed. ☐

(Contd. from page 12)

balanced development of all rural settlements can be made. The lack of a viable primary planning unit below block level is the significant factor in the failure of past long-drawn efforts. The lack of a course of action (development policy) at grass-root level is also detrimental to the balanced development of all rural settlements as well as the enire sections of the society.

The first requirement for the accomplishment of the goal of rural development planned to lessen rural poverty, is the reorganization of the present primary planning units (Nyaya Panchayats). The second rquirement is the formulation of development policy (a course of action) for each Nyaya Panchayat at local level. The local hurdles which are usually responsible for the backwardness of a particular Nyaya Panchayat should be borne in mind while framing this policy. Local needs of that Nyaya Panchayat should also be considered which formulating the policy. Besides, the policy should be linked with the local resources of the Nyaya Panchayat. Simultaneouly, the skills of the local experts of the Nyaya Panchayat should essentially be utilized for the development of that Nyaya Panchayat. ☐

Exports of cardamom, tea and coffee rise in 1985

In 1985, 89,377 tonnes of coffee and 2,22,000 tonnes of tea were exported as against 65,000 tonnes of coffee and 2,17,000 tonnes of tea during 1984.

The export of 'large variety' of cardamom registered an increase of 180 per cent in quantity during the period April-December 1985 as compared to the corresponding period of 1984. The earnings recorded an increase of 223 per cent while the unit value realisation went up by Rs. seven per kilogram. The total quantity exported during April-December 1985 was 3,13,849 kilograms worth Rs. 1,47,13,277.

In the case of small variety of cardamom, however, the export performance during April-December 1985 was not so good. Although the quantity exported increased by 30% over the quantity during the same period of the previous year, the value of earnings decreased by 24 per cent. The unit value realisation was also less by Rs. 121.37 per kilogram. The total quantity exported during the period was 19,54,752 kilograms valued at Rs. 34,43,91,120. ☐

Intensive Fertiliser Promotion Campaign is promising

Intensive Fertiliser Promotion Campaign has led to increased consumption of fertilisers in the target districts. According to a review, fertiliser consumption increased by 51.3 per cent in these districts compared to the increase of only 35.4 per cent at the national level. The review covered the progress of the campaign during the last three years (1982-83 to 1984-85).

Intensive Fertiliser Promotion Campaign was launched from kharif 1981. To begin with it covered 67 districts which were later on increased to 104. The districts selected for the Campaign were those which had good irrigation or sufficient rainfall, but relatively lower fertiliser consumption. The purpose was to narrow down imbalances in fertiliser consumption as about 70 per cent of the total consumption is accounted for by 25 per cent of the districts in the country alone.

This Campaign is being implemented in coordination with State Governments but being exclusively financed by the identified manufactures who were issued clear guidelines by the Central Government for carrying out the Campaign.

. . . and find out what ails IRDP

Dr. Balishter

Integrated Rural Development Programme has been the sheet-anchor of poverty alleviation programmes in our country. It was extended to all the blocks of the country, during the Sixth Five Year Plan. Though the physical targets of the programme were not difficult to achieve but, according to the author, its efficacy in lifting the people above the poverty line has been doubtful because of conflicting reports about its success. In this case study of a block in the Agra district of U. P. the author observes that the implementation of IRDP suffers, among other things, from lack of sincerity and objectivity.

THE INTEGRATED RURAL DEVELOPMENT PROGRAMME is the single most important anti-poverty programme implemented during the Sixth Five Year Plan in all the Community Development Blocks in the country. It aims at providing substantial assistance to the rural poor which would increase their income to a significant extent so that they cross, once and for all, the "poverty line". The target group under the programme consists of the poorest of the rural poor, i.e., small and marginal farmers, agricultural and non-agricultural labourers, rural artisans, self employed people, and other weaker sections of the community. Special attention is to be paid to the coverage of scheduled castes and scheduled tribes.

The Programme had laid lown the target of lifting 15 million families having annual income of Rs. 3,500 or less per family, covering all 5011 blocks of the country, above the poverty line by the end of the Sixth Plan. According to the guidelines selection of the beneficiaries was to be according to the *Antyodaya* principle. Fund allocation was Rs. 1500 crore from Central and State Governments to be added to Rs. 3000 crore from the banking in the form of credit. The Programme has completed the Sixth Plan period (1980—85) and is to be expanded in the Seventh Plan period vastly. Available figures regarding achievements under the Programme indicate that it has exceeded the physical targets both in terms of total disbursements as well as the number of beneficiaries covered.

Apart from fulfilling the physical targets, the question remains whether the main objective of the Programme of lifting people below the poverty line is attained. Officially it is claimed that poverty level has been brought down from 51 per cent in 1980 to 37 per cent in 1984. But, the evaluation report of the I.R.D.P. prepared by the Planning Commission makes dismal reading. In a nut-shell, the focus of IRDP has been on meeting targets in terms of financial allocation and number of persons covered, and not on job creation and income generation. Not only this the report revealed a number of loopholes in the formulation and implementation of the IRDP. In the absence of any comprehensive study evaluating the performance of IRDP, it is very difficult to conclude the real impact of the programme. Thus it is high time to make micro-level studies at the block level to evaluate the performance of IRDP so that corrective measures may be taken for the years to come. This study of the Programme, in terms of achievement vis-a-vis the stated goals and the role of the banks, was undertaken with the following specific objectives :

1. To study the extent of coverage of the families;

2. To study the disbursement of loans in terms of adequacy and purpose;
3. To examine the impact of bank finance on the family income of the beneficiaries;
4. To find out the extent and nature of beneficiary families crossing the poverty line.
5. To examine the position of repayment of bank loans by the beneficiaries.

Methodology

Agra district of Uttar Pradesh became the first in the State to successfully implement IRDP and the State Bank of India's (SBI) contribution was greater than the other banks operating in the district. This study was deliberately conducted in Bichpuri Block of Agra district where the SBI, Bichpuri, is a leading branch. The secondary data relating to number of villages financed, number of identified families financed, amount of loan disbursed to different categories of families, and purpose-wise disbursement of loans, were taken from the S.B.I. branch and C.D. Block records. For assessing the impact of bank finance on family incomes and repayment performance, primary data were collected from 61 families financed in the block during 1983. Data were collected for the years 1981-82 and 1984-85 (before and after the bank loans) through personal inquiry with the help of a set of schedules and questionnaires.

Coverage

C. D. Block, Bichpuri has 43 villages and 13412 rural families. The weaker sections, including small and marginal farmers and landless labourers, comprise 10219 or nearly 76 per cent of all rural families. The total number of poor families below poverty line identified by 1984-85 is 9443 which constitutes nearly 70 per cent of the total rural families and 92 per cent of the families in the weaker section Of 9443 identified poor families, the small farmers, marginal farmers and landless labourers respectively comprise 1282 (14%), 3294 (35%) and 4869 (52 per cent). Only 3415 families of 9443 identified poor families have been covered under IRDP. These constitute about 36 per cent of total identified poor families in C. D. Block. This shows that against the target of 3000 families per block during the Sixth Plan, 3342 families have been covered under the Programme. Further analysis of data revealed that of 3415 families financed under IRDP the small farmers, marginal farmers and landless labourers, respectively, constituted about 15, 31 and 54 per cent. The scheduled caste families financed under the Programme constituted about 50% of the total financed families, thus crossing the stipulated target of 30 per cent.

The total loan advances by all banks in the block during the Sixth Plan totalled about 1.14 crore of which 48.68 per cent were advanced to scheduled caste families. The per family loan advances for creating assets were about Rs. 3330 in case of scheduled caste families and about Rs. 3475 in case of non-scheduled caste families.

Coverage by S.B.I.

The State Bank of India, Bichpuri branch, has covered only 6 villages during Sixth Plan under IRDP out of the total of 43 villages in the C.D. Block. In these villages the total number of identified poor families during the five year period (1980—85) was 998. Only 298 families of 998 identified families, about 30 per cent, were advanced loans during the 5 years from 1980-81 to 1984-85. Of these, 134 (45%) were scheduled caste families and 125 (55%) non-scheduled caste. About 35 per cent of identified scheduled caste families and 27 per cent of identified non-scheduled caste families were financed. Of the total families financed 12 per cent were small farmers, 37 per cent marginal farmers and 51 per cent landless labourers. This is in keeping with the spirit and content of the IRD Programme.

Loan advances

Bank advances (SBI branch, Bichpuri) totalled Rs 9.57 lakhs during the five year from 1980-81 to 1984-85. Of the total advanced (Rs. 9.57 lakhs) about 41 per cent went to scheduled caste families. The loan per family averaged Rs. 3300 for scheduled caste and Rs. 3200 for non-scheduled caste families. If we consider the loan advances per family for different economic categories (small farmers, marginal farmers and landless labourers) it is almost equal amounting to about Rs. 3200. Thus bank advances are being made available to the scheduled caste and non-scheduled caste families in proportion to their number in the total identified families, but the total coverage of families under the Programme during the Sixth Plan (1980-85) is inadequate.

Purpose-wise loans

Out of 298 families financed by the S.B I. branch, Bichpuri, 201 families (67%) were provided loans for milch animals and other allied agricultural purposes, and 97 families (33%) for non-agricultural purposes. This represented 67 per cent of total disbursement irrespective of social group. By economic category loan advances for milch animals and allied agricultural purposes also dominate. However, its extent was the highest (86%) for small farmers, lowest (53%) for landless labourers and 81 per cent for marginal farmers. In other words, landless labourers were advanced more loans for non-agricultural purposes like shoe-making, carpet-making and carpentary.

Impact of IRDP

To assess the impact of IRDP and benefits received by the beneficiaries, the change in income before and after the IRDP assistance is analysed. The analysis of data revealed that income of sample beneficiary families had increased both in current prices and when

adjusted for price changes between 1979-80 and the survey period. The overall increase in income of sample beneficiary families was worked out to about 68 per cent at current prices. But when adjustment was made for rise in price, this increase was only about 41 per cent. The highest increase was recorded for landless labourers in both scheduled caste (59 per cent) and non-scheduled caste (48 per cent) families. With all economic categories (small farmers, marginal farmers and landless labourers) the increase in income was higher for scheduled caste families than non-scheduled caste families.

Since loans were advanced for different purposes, it was pertinent to analyse the impact they had on beneficiary families. Analysis of data revealed that the increase in income was more for those families who were financed for non-agricultural purposes than those for agricultural and allied purposes. Increase in income was highest for families financed for shoe-making (87%) and lowest for buffaloes (29%). Thus non-agricultural activities had better returns than agricultural activities.

Families crossing Poverty Line

Out of 61 beneficiaries 34 crossed the poverty line. Thus, about 56 per cent of beneficiaries crossed the poverty line of Rs. 3500|-. But these are in current prices. When adjusted for price changes between 1979-80 and the survey period, it was found that only 21 families (35%) crossed the poverty line. It is to note that out of 61 families assisted under IRDP, 9 families (15%) were not eligible for getting IRDP assistance because these family did not really belong to the caetgory of "poor". Thus out of 61 beneficiary families, 9 were already above the poverty line Thus, the percentage of beneficiaries whose income had risen above the poverty line of Rs. 3500|- came to 48 per cent of all eligible beneficiaries (i.e., excluding the 9 families who were not poor). But when adjustment is made for price change only 15 beneficiaries of the 52 eligible beneficiaries crossed the poverty line. Thus, only 23 per cent of eligible beneficiaries crossed the poverty line. Thus, the result of the study shows that the Programme had hardly made a major dent upon the poverty and living conditions of the beneficiaries in the area of study.

Recovery performance

Repayment of loans is of crucial importance for financing institutions, as repayment not only ensures recycling of public money for development but also builds up confidence amongst the financing institutions in their own ability to prosper economically. The repayment performance of bank loans provided to 61 beneficiaries was examined. It was revealed that out of 61 beneficiaries 17 (28 per cent) fully repaid their loans in a period of 24 months, 31 (51%) beneficiaries had partly paid, while 13 (21%) did not repay at all. It is further revealed that 6 of the 13 beneficiaries were wilful defaulters. The overall rate of repayment of bank loans worked out to about 69 per cent which was satisfactory. It was comparatively better with scheduled caste families (76%) than non-scheduled caste families (54%). It is further revealed that the repayment performance was higher for landless labourers than marginal and small farmers.

Marginal farmers also had better repayment performance than small farmers in scheduled caste and non-scheduled caste families. The better repayment performance of landless labourers and marginal farmers resulted from their getting more loans for non-agricultural activities (shoe-making, carpet making and shops) which had better returns than agricultural activities.

Conclusion

The following conclusions emerge:

(1) The problem of rural poverty is a mass phenomenon and is not only confined to the scheduled castes.

(2) All sample households that have been identified as poor and covered under the programme were not really poor. Proper checks are to be evolved to avoid false identification of households.

(3) Bank advances made to scheduled caste and non-scheduled caste families are almost in proportion to their numbers in the total identified families. The total coverage of families by S.B.I. branch, Bichpuri, under the programme is inadequate

(4) Bank loan advances for milch animals dominate Advancing loans for milch animals is considered to be the main thrust for removal of poverty from the rural areas, but it appears that non-agricultural activities have a greater scope for raising the family income of the poor. Most of the milch animals purchased under the Programme were of poor quality.

(5) Bank finance made to poor families had marginal impact on the income of beneficiaries. The impact of the back finance under the Programme was greater on landless labourers because these families were advanced more loans for non-agricultural activities like shoe-making, carpet-making and shops. The returns on these were comparatively higher, probably because of a more intensive use of idle labour and demand for the products. Thus, banks should give more emphasis to financing non-agricultural activities to remove rural poverty.

(6) Only 23 per cent of eligible beneficiary families were able to cross the poverty line. More families of landless labourers crossed the poverty line than those of marginal and small farmers. More scheduled caste than non-scheduled caste families crossed the poverty line as the bank loan for non-agricultural activities was greater.

(Continued on page 34)

Our rural development as a foreigner sees it

Yojana Correspondent

"THE ANTI-POVERTY PROGRAMMES (IRDP, etc.) are today much more prominent than ten years ago. One comes across success stories of various types but both villagers and officials do not hide a number of bakages and losses, which are confirmed in several government reports. Even poor villagers clearly point out such defects." This was stated by Gilbert Etienne, Professor of Development Economics at the Graduate Institute of International Studies and the Institute of Development Studies, Geneva in his new round of surveys of rural development in several States, districts and villages of India, between October, 1985 and February, 1986. These surveys are studies in the growth process and its impact on standards of living in some areas of rural development This follow the earlier such survey made in mid 1960s and the late 1970s by Prof. Gilbert

Prof. Gilbert visited India in 1963-64, 1967, 1972, 1975 and 1978-79 to study for himself various development measures being taken for the welfare of people in rural India and the dent that poverty alleviation programmes were making in the villages. Based on his studies, he prepared a paper "The growth process and its impact on standards of living in some areas of rural development", which aimed at analysing different types of concrete situations and drawing from them some conclusions

Prof. Gilbert selected one village for interviews of farmers of all denominations in order to see how they understood their own problems. He met representatives of different government agencies at work in the districts and in the fields to elicit the views of the administration. He also spent some days in the state capitals for general briefings. The districts covered were Bulandsahı, Varanasi, Muzaffarpur, Guntur, Thanjavur and Satara. The surveys in 1978-79 included Nowgong in Assam, Puri in Orissa, and Jodhpur in Rajasthan.

Rural resurgence

In his survey report of 1978-79 Prof. Gilbert observed, "the old images of a static rural India have definitely gone. Even in remote and economically backward areas, including brief visits to the south of Gaya district and some tribal areas of Orissa one notices changes in economic and social life, as well as in the techniques in use but, what greatly varies, is the pace of changes and development".

Findings

The new round of surveys (1985-86) cover the villages using pumps, new seeds, fertilizers and pesticides for two decades, prospects of their future developments compared to the achievements so far, changes in the living conditions, etc. In this latest round of survey studies, Prof. Gilbert has divided India into three broad zones: (1) advanced areas (mostly in the north-west and south-east), (2) poor but potentially rich areas, yet facing difficult water management problems, in the eastern plains, and (3) regions facing serious physical constraints in terms of lack of water and soil losses, mostly in peninsular India.

The advanced districts in north-west have so far recorded major increase in foodgrain production. Production of wheat rose from 1,200—1,500 to 2,500—3,500 kilograms per hectare and yields of paddy from 2,000 to 3,500—4,500 kilograms per hectare.

Green revolution has made the country self-sufficient at the national level. It has also brought about social benefits to the poor in the advanced districts, where practically all farmers including

the small ones use new seeds, fertilisers and pesticides. If they can't afford a tube-well, they buy water from a neighbour. Population densities in green revolution belt vary from 500 to 700 per square kilometre. Land holdings tend to become smaller and the number of landless labourers is on the increase.

Today irrigation as well as double cropping has improved through a massive expansion of private tubewells following consolidation of land holdings in 1965 in Western Uttar Pradesh. For example, a family in Khandoi village of Bulandshahr today is able to meet both ends out of 1-1.25 hectares produce of wheat, sugarcane, maize, jowar and bajra against 1.75 to 2 hectares of land in 1963.

The other findings of Prof. Gilbert reveal that small farmers in advanced districts of north-west and south-east produce more in their farms. Landless labourers today get Rs. 10 per day or sometimes more marking a clear increase in real terms from Rs. 5 in 1978-79. At harvest time they get even 10 Kg. of wheat per day against 5 Kg. twenty years ago No less than 160 men out of total population of 1,800 have found a job outside.

Even in the south-east districts of Guntur (Andhra Pradesh) and Thanjavur (Tamil Nadu) the last varieties of paddy have recorded good results. Farmers with 0.8 hectares manage to save some bags for sale. Trend towards diversification of economy is noticeable Wages tend to incrase in real terms as also job opportunities.

Inspite of electrification having made tremendous progress in most parts of the country, supply, maintenance and operation of the network of power suffer from many shortcomings.

In Bihar, however, the progress recorded is much slower The overall expansion of the economy remains too slow to really affect the poor positively For example, in Muzaffarpur district wages remain more or less stagnant in real terms, that is Rs. 5 to Rs. 6 or two to three Kg grains per day

Prof. Gilbert observed considerable changes in eastern Uttar Pradesh. In Varanasi district (village Nahiyan) most of the farm lands have been covered by private tube-wells Yields of wheat increased from 900 kilogram per hectare in 1964 to over 2,000 Kg; paddy from 1,000-1,500 Kg. per hectare to over 2,500-3,200 Kg Wages have risen from Rs. 3 in 1978 to about Rs. 10 in 1985. Besides, a number of very poor people begin to know some improvements in their conditions.

In Puri district, situation is a little better. One notices some progress in the paddy yields. There is not too much water. Wages are around Rs. 7 to Rs. 8 a day.

Suggestions

Prof. Gilbert feels that the next steps to maintain high average yields of 4,000-5,000 Kg.|hectare of wheat and 6,000 Kg.|hectare of paddy are going to be tough. Unless definite improvements occur in irrigation and water management, in the better use of combined fertilizers, in an adequate use of pesticides, and with more research for monsoon crops, it will not be possible to sustain these figures.

He suggests opening up of new avenues of employment in order to diversify the process of economic development. According to him, the future of agriculture lies in the huge plains of eastern India where enormous increases in yields and multi-cropping are possible. This will reduce considerably a reservoir of poverty. In this zone, a large-scale flood control works are needed besides drainage.

As far as water management in eastern zone is concerned, Prof. Gilbert suggests that more emphasis be given to on-going projects and on the maintenance-cum-improvement of old canal systems even if it is at the cost of new projects.

He calls for improving dryland farming in the Deccan as a huge area in this region is unirrigated due to lack of ground and surface water.

Prof. Gilbert feels that the food front has been by and large consolidated at the national level. Now there is need to shift the focus on to the dryland farming techniques

The new advance made in agriculture and irrigation may take several years to complete, observes Prof Gilbert. But how far the more dynamic trends appearing in eastern U.P. will spread further east is a question mark in view of various constraints.

Visible signs of development

Whatever changes are noticed in the process of development, observes Prof. Gilbert, poor people are still left out of the fruits of development. These changes, after all, do not mean abrupt changes in living conditions. But a number of very small farmers are better off or, say, less poor. They admit it and their outlook, better dress and greater self-confidence among several scheduled castes do confirm it. These trends were also obvious in the advanced areas by the early 1970s.

Following his visits of districts, States and New Delhi and inter-action with various authorities Prof. Gilbert underlined the fact that the next steps in agriculture and rural development as a whole are going to be tough and probably not easier than whatever has been achieved so far.

MODVAT means reform in economy

J. Datta

The author, Chairman of the Central Board of Excise and Customs, says MODVAT involves sacrifice of central excise revenue of about Rs. 850 crore annually. The system seeks to compensate the central exchequer by levying excise duty on different products on a whole-sale basis. The author defends MODVAT saying it helps bring down the costs all round and check large scale evasion of sales tax as adjustments in the duty paid will be possible only on transactions covered by bills and vouchers. Thus it helps curb generation of black money too !

THIS YEAR'S BUDGET PROPOSALS INCLUDE a novel idea which is known as MODVAT, standing for Modified Value-Added Tax. The expression, Value Added Tax, is well known. It means levy of duty through the stages of processing of goods and allowing adjustment of duty in the hands of several subsequent processors. That way the question of levy of duty on a value, which already includes duty at the earlier stage, does not arise The other benefit from such an arrangement is that the financing cost of the manufacturers in the later stages is reduced as they do not have to finance the amount of duty already paid in the earlier stage, thus the cascading effect of duty on manufactured products is avoided.

How it works

The MODVAT could be explained in simpler terms. If we take an article such as iron or steel on which duty is payable, then we can explain this cascading effect better The quantity of these materials costing about Rs. 1,100 would involve duty already paid of about Rs. 100 at the rate of ten per cent. When this material is taken up by an engineering unit for further processing into, say, some simple form such as bolt or nut, it contributes to addition of value of say Rs 500. The total product value then goes up to Rs. 1,600 On that, a duty of 10 per cent will involve a payment of Rs. 160 However, this value of Rs. 1,600 already includes Rs. 100, which has already been paid on the original material In other words, the amount of Rs. 160 collected at the second stage would amount to tax on an amount of tax of Rs. 100 already paid or Rs 10 (assuming a rate of 10 per cent). Further, the financing cost of the material would have included the incidence of interest payable on the additional amount of Rs. 100 on the basic material costing Rs 1,100 representing the duty paid on that material. In a value added tax system, the person buying the basic material for further processing would have got a credit of Rs. 100 in his account for tax paid and included in the price of Rs. 1,100. His cost, therefore, would only be Rs. 1,000 and his financing cost for Rs. 1,000 lower than for Rs. 1,100. Various bodies of experts have calculated this incidence of financing cost or interest charges of the amount of duty borne by materials which are taken for further manufacturing and processing as about 4% of the ultimate cost of the product. This cost contributes to the increased value in any simple form of taxation outside VAT : and this inflates the amount of duty payable. However, under the VAT system, this effect is eliminated thus bringing down the cost of production not only on account of reduced financing cost but also because of the system in which duty is not allowed to be levied on duty paid in the earlier stages.

The legal obstacle

In India, the modified value added tax system, which is proposed in the Budget proposals of the Finance Minister this year, has been so described because it is not possible to fully introduce the value added tax concept in the context of our constitutional provisions under which the authority for taxation is divided between the Central Government and the States. As the Central Government does not collect the duties levied by the States or the municipal bodies, like sales tax and octroi duties, it cannot be expected to allow adjustments of those duties. To that extent, MODVAT, as proposed by the Finance Minister, is a modified version of the value added tax, allowing adjustment of only Central Excise duty. Secondly, the proposals of the Finance Minister cover only commodities falling in thirty seven out of ninety six chapters of the Central Excise Tariff Schedule under which the Central Excise duties are levied. On both considerations, the proposals under consideration with the Parliament are only a modified version of Value Added Tax

Brings down prices

The MODVAT principle involves considerable sacrifice of revenue on the part of the Central Government in respect of central excise duties and, even in its present limited application, this sacrifice could amount to about Rs. 850 crore in a year Because of the tight budgetary position of the Central Government, ways and means had, therefore, to be found to compensate the Central Exchequer for this loss. This was sought to be achieved by raising the rate of duty leviable on different products on a wholesale basis, keeping the resultant additional accretion of revenue to about the same amount as was estimated to be loss to the Central Exchequer on account of MODVAT. Articles selected for this hike in duty are primarily those which are expected to benefit from the MODVAT Scheme. Because of this increase in the rate of duty, the product prices have gone up in many cases and there has been substantial uniformed criticism attributing the price rise to MODVAT as such. MODVAT in no circumstances can account for any increase in the cost of production. In fact it brings down the costs all round. The value on which the Central Excise duties are assessed has universally come down in the entire range of products which are covered by the MODVAT Scheme but because of the increased rate of duty applicable to many of these products, the total cost to the consumer, inclusive of the duty paid, has no doubt gone up in many cases. There are many exceptions where, because of substantial benefit under the MODVAT scheme and the absence of a hike in the rate of duty, the consumer prices of the products has also come down; but, by and large, there have been quite a few cases where the resultant price of products has gone up.

Curbs sales tax evasion

MODVAT Scheme has to be considered from another angle also. It requires adjustment in the duty paid at earlier stages of product under processing on the basis of evidence of duty actually paid. This is a basic requirement though, some relaxations have already been given particularly in the case of small-scale units. The emphasis of MODVAT is on transactions covered by bills and vouchers. Therefore, the scheme sounds the death knell for transactions not covered by bills and vouchers as are believed to be rampant today and that way it should be able to tackle the large-scale evasion of sales tax; octroi duties and income tax in a very effective manner The scheme also favours consumer resistance in a big way. It permits the burden of duty on the finished product to be estimated clearly. It provides, therefore little scope for manipulation of the consumer price on the ground of changes in the duty rates on inputs.

The effect on the export front is still better. The cumbersome procedure of 'drawback' requiring the time consuming formality of fixation of rate is totally dispensed with. The goods can be exported under bond without payment of duty retaining the MODVAT credit on record for the export goods and that amount can go to make his further export quotations more competitive.

Tax evasion unprofitable

The best of all is in our state of economy, where evasion and avoidance of duties play a very important part in the economics of business transactions of many manufacturing firms, the MODVAT Scheme is going to introduce a much-needed reform like a fresh breeze of air. In today's conditions, a manufacturer cannot compete with his competitors, who have started successfully evading or avoiding the central excise duty. He, therefore, falls in line with these malpractices to remain in business, rather than expose those business houses for corrective action by the Government. Under the MODVAT Scheme, particularly in the case of components which are required to be taken in for further processing for producing an excisable product, he will no longer be compelled to fall in line with such malpractices. Firstly the firm resorting to the malpractice will find it unprofitable. As he suppresses his raw material intake he will lose the MODVAT credit to the extent of duty paid on the quantity of raw material suppressed from his accounts and secondly his resultant product, if it is in the nature of a component, will not be bought by another manufacturer who has to use it for further processing, as that transaction, without cover of evidence of duty payment, would not entitle the second manufacturer to take his MODVAT credit. Such transactions should, therefore, soon become things of the past and this is expected to be the greatest contribution of the MODVAT Scheme.

However, if all these assumptions prove to be right and there is no reason why they should not prove to be right, the MODVAT Scheme would be successful in bringing the much-needed reform in our economy, curbing the malpractices and controlling the generation of additional black money. May be, in the near future, the country will find the need for expressing its gratitude to the present Finance Minister for being courageous enough to bring about such a radical reform and it is certain that once the scheme in its limited application is proved to be successful, its coverage will be extended to the entire central excise tariff and, if the good results, as expected materialise, the much-needed concurrence of the States for surrendering their powers of levy of sales tax to the Centre may also materialise thus ushering in greater reforms in the taxation pattern of the country.

There has also been a lot of criticism of the MODVAT Scheme on the count that sufficient advance preparation had not been made for its introduction. Though this has come from quite high and responsible quarters, one should be permitted to dismiss this as so many other preachings one receives daily from persons who could best be advised to first examine their facts carefully before rushing on to preachings. The scheme in its basic essentials has been there as a part of Central Excise administration ever since 1962. If 24 years of practice has not been adequate preparation one would not know that would be. The proforma credit scheme of central excise duty, in force since 1962, permits adjustment of central excise duty paid on a material when that material and the product made out of it are both covered by the same tariff heading. Under MODVAT scheme this benefit is wider as adjustment is provided even when the material and the products made out are not covered by the same heading but covered by articles falling under 37 Chapters notified for MODVAT. This apart, packing material and paints for coating the products have also been extended this facility. To this extent the Proforma Credit Scheme in a more liberalised form has come as a MODVAT scheme. The arrangement for credit is also simple and free from red-tape as the manufacturer has merely to send an intimation to the Central Excise Department about the particulars of goods for which he proposes to take MODVAT credit and the final product that he manufactures. After this intimation he is free to take credit of the duty already paid without awaiting any official approval or verification of the goods received. Naturally this is too simple for both unscrupulous traders who practise trade without bills and vouchers and the overzealous official who wants to interrupt everything to assert his importance. Vested interests all round are, therefore, panicky in their attempt at scuttling the scheme. It is hoped that they will soon realise the futility of their efforts.

(Courtesy : Spotlight, AIR)

BHEL develops device to save fuel oil

For the first time in India, BHEL has developed a new system that will help save fuel oil worth crores of rupees in thermal power plants. Known as DIPC (Direct Ignition of Pulverised Coal), the system cuts down the use of oil in coal fired thermal power stations by 90 per cent. Satpura Power Station under the Madhya Pradesh Electricity Board will be the country's first power station to utilise this new system.

BHEL has, thus, joined five other leading boiler manufacturers of the world who have developed this system. BHEL achieved this feat entirely through its own R & D. Oil worth Rs. 400 crore per annum can be saved if the system is installed in all the coal-based thermal power stations in the country. □

Exports during Seventh Plan projected at Rs. 60,700 crore

India's total exports during the Seventh Plan are projected at Rs. 60,700 crore (at 1984-85 prices). The Government has taken a number of steps to boost exports including modification and periodic revision of our industrial and fiscal policies.

181 new TV transmitters in Seventh Plan

An outlay of Rs. 700 crore has been allocated for the development of television during the Seventh Plan. This is meant for setting up 181 new transmitters and 19 new programme production centres in the country. □

Indo-Soviet cooperation in computers and electronics

India and the Soviet Union signed a Protocol and a Working Programme of Cooperation in Computers and Electronics for the five-year period 1986-1990 in New Delhi on March 19, 1986. Under the Programme, India will export to the Soviet Union electronics items worth Rs. 167crore and import computers and electronic equipments worth Rs. 62.3 crore from that country.

In the framework of bilateral cooperation both sides agreed to creat an infrastructure of maintenance, spare parts supply and software support for computers to be delivered to India and electronic equipment to be delivered to USSR.

Fiscal discipline and economic growth

S. Ananta Charlu

The new credit policy for the first half of 1986-87 was announced by the Reserve Bank of India in early April 1986. The author says the new credit policy balances the twin aims of discipline and growth. The package of measures outlined in it mainly aim at checking the rate of inflation as well as bringing down the growth of money supply. Credit authorisation scheme has been introduced to enable the commercial banks greater flexibility in their operation. The author here highlights salient features of the policy.

THE RESERVE BANK OF INDIA is the bankers' bank. It is charged with the major responsibility of maintaining financial discipline in the complex economic activity of this vast nation. At the same time, the Bank's regulatory measures are to be in consonance with the policies of the Government and help in promoting the economic growth of the country. The credit policy announced by the Bank in early April 1986 for the first half of 1986-87 carefully balances the twin aims of discipline and growth.

Viability

The Governor of the Bank, Mr. R. N. Malhotra, who addressed the Chief Executive of the major scheduled commercial banks on this occasion, said that the cautionary stance of the credit policy would continue. The objective of the policy, he said, was to ensure that the needs of food procurement were fully met and that all productive activity contributing to increased output was financed by banks out of their own resources. During this period the banks should also rectify shortfalls, if any, in the maintenance of reserve requirements, he added.

The package

The credit policy contains a package of three measures. They relate to maintenance of statutory liquidity ratio, rationalisation of selective credit controls and streamlining of the credit authorisation scheme. The specific decisions in all three areas were taken keeping in view the imperative need to check the rate of inflation. It was noted that the money supply in the last four years has increased at a high annual average rate of 17.2 per cent. The new policy hopes to bring down the growth of money supply below this rate.

The Reserve Bank has estimated a growth of around Rs. 15,000 crore in deposits of scheduled commercial banks in 1986-87 The growth is likely to be approximately equal during each of the two halves of the year. With a growth of seven thousand five hundred crore rupees in the first half of the year, the banks will have adequate money to meet the credit requirements out of their own resources and also substantially build up their liquidity. It was, therefore, decided that the statutory liquidity ratios of 37 per cent of net demand and time liabilities will be kept unchanged and the four percent waiver allowed last year will be progressively brought down to zero by October

Increased bank credit

Keeping this liquidity ratio the banks would still be able to provide for an increase in bank credit of two thousand three hundred crore rupees in the first half of 1986-87. Of this increase three hundred crores would be for food and the rest for industrial and other credit

Considerable relaxation was allowed in selective credit controls in regard to certain food items keeping in view the improvement in their supply and price situation. Paddy and rice, cotton and Kapas, cottonseed and cottonseed oil are completely exempted from controls. The minimum margins on oilseeds and vegetable oils are reduced across the board by fifteen percentage points. Advances against high-yielding and hybrid seeds used for growing oilseeds and certified by appropriate authorities are exempted from credit controls. To help small producers and dealers of commodities which continue to be subject to selective credit controls, the exemption limit for advances per borrower is doubled from Rs. 15,000 to one lakh. The Governor, Mr. Malhotra, advised the banks to plan for an increase in food credit between March and June this year in view of the good rabi crop and the resultant increase in procurement and also in view of the relaxations in credit controls.

Credit authorisation

Changes have also been introduced in the Credit Authorisation Scheme to enable the commercial banks greater flaxibility in its operation without dilution of financial discipline The Scheme covers mainly larger bank accounts Under the new liberalisation, Banks are authorised to give credit for working capital upto a limit of six crore rupees instead of four crores. Discretionary powers of banks to sanction additional limits upto a period of three months have also been enlarged.

The new measures should be seen as continuation of the changes brought about in the Credit policy last year. Against the background of a rapid expansion of aggregate monetary resources in 1984-85, it became imperative to moderate the growth of liquidity and the pace of reserve money creation The policy changes introduced by the Reserve Bank last year have succeeded by and large in curbing the potential inflationary pressures The Economic Survey for 1985-86 has noted that the monetary trends in the year under review suggest that the various monetary and credit policy measures taken to control excessive growth of liquidity in the economy have started yielding desired results.

Money market

The Chakravarty Committee which made a comprehensive review of the monetary system has suggested in its report several measures for improving the effectiveness of the system Though the recommendations of the Committee are still under consideration of the Reserve Bank and the Government some of the important suggestions are taken up for implementation. According to the Committee, a well organised money market provides an efficient mechanism for the transmission of the impact of monetary regulation to the rest of the economy As a follow up to this suggestion, the RBI Governor has announced that a working group is being set up to examine the possibility of enlarging the scope of the money market and to recommend specific measures for evolving money market instruments. □

(Courtesy Spotlight, AIR)

Youth programmes to be strengthened

The Ministry of Human Resource Development is to strengthen the on-going youth programmes and also introduce three new schemes, viz., National Youth Award Scheme, Assistance to Youth Clubs and Training of Youth, during 1986-87.

The Youth programmes are aimed at affording young people an opportunity to be better individuals and enabling them to contribute in the task of national development. These include programmes meant for rural youth through Nehru Yuva Kendras (NYKS): programmes for students through National Service Scheme (NSS); trekking and mountaineering activities, scouting and guiding.

The total number or Nehru Yuva Kendras functioning in the country at present is 219. About 15 lakh rural youth participated or benefited from one or the other activities organised by the Kendras during 1985-86. Under the National Service Scheme about 7 lakh students were enlisted during the year who took part in different programmes. 23 National Integration Camps, involving young persons from all parts of the country, were organised and over 220 youth groups sponsored by Nehru Yuva Kendras, voluntary agencies and Educational Institutions were assisted in undertaking trekking and mountaineering activities during the period. □

Tourist facilities to be expanded

A decision has been taken to develop tourist facilities in various Wild Life Sanctuaries, both for the domestic and foreign tourists. A provision of Rs. 560.00 lakh has been made for the purpose in the Seventh Five Year Plan. Action has been taken for the construction of forest lodges as well as provision of mini buses|elephants in National Parts|Wild Life Sanctuaries at Betla, Ranthambore, Similipal, Bandhavgrh, Enjal, Manas, Corbett, Dudhwa, Kaziranga, Chilha, Alwar, Madumalai, Pong Dam Lake, Ranuka Sanctuary, Tirthan and Sam Desert National Park, etc.

The Government has accepted a recommendation on the establishment of a Committee of Wild Life Experts to advise the Government in the development and promotion of Wild Life Tourism. □

Versatility of laser technology

Biman Basu

Since the invention of laser technology by American physician Theodore Maiman in **1960** *it has found its multiple uses in communication, computers, cutting, welding, shaping, pollution monitoring and surgical treatment of diseases thus making laser an all-purpose versatile miracle beam to improve the lot of people. The author cautions against its use in weapons systems and says it would be unfortunate if future developments turn laser into a 'death ray' of mass destruction.*

IN HIS FAMOUS SCIENCE FICTION "The War of the Worlds", author H. G. Wells mentioned about Martian invaders using a kind of 'death ray' against earthlings. These invisible rays, he wrote, made anything combustible burst into flame, softened iron, cracked and melted glass and made lead run like water. Although pure fantasy at his times, Wells' description almost fits today's lasers, the versatile beams of light that have revolutionised almost every branch of technology. Wells wrote the novel in 1897, but the first practical laser came much later. It was only in 1960 that the American physicist Theodore Maiman first succeeded in creating a pulse of intense crimson light from a ruby laser that was brighter than the sun. In the past 25 years, the spectrum and power of lasers have grown and so has the range of their applications. But before going into them, let us see what a laser is.

First of all, it must be made clear that 'laser' is not really a single world. It is an acronym from 'Light Amplication by Stimulated Emission of Radiation.' The basic principle behind its working is stimulated or forced emission of light from atoms or molecules. The idea of such a process was first proposed by Albert Einstein in 1917 Stimulated emission is similar to spontaneous emission of light which occurs in an ordinary filament or fluorescent lamp. In these lamps, passage of electric current through the tungsten filament or gas excites the atoms or molecules in them to a higher energy level. As the excited state is highly unstable, the atoms or molecules quickly lose the extra energy in the form of light and return to the ground or unexcited state This is known as spontaneous emission because the process occurs spontaneously

In stimulated emission also, the atoms or molecules are first raised to a higher energy state but here the process is more drastic A much larger proportion of atoms are raised to a higher energy level than in spontaneous emission. The large population of excited atoms or molecules give out light of a single wavelength or colour when they collide among themselves. An advantage with such a process is that it also causes an amplification of light with the result that intense beams of monochromatic light can be produced.

Ordinary and laser lights

Light from a laser differs from ordinary light much as music does from noise. Like sound, light travels in waves, similar to ripples on water. Common light, from an electric lamp, a candle or the sun, is made up of a mixture of different wavelengths, or colours. But the light from a laser is made up of a single wavelength with all the waves travelling in one direction.

Another property that distinguishes laser light from ordinary light is its coherence. Laser's parallel light waves move in unison reinforcing each other like voices in a choir. This property makes it possible for laser beams to travel long distances without diverging much along the way. In fact, it is possible to send a laser beam to the moon and reflect it back to earth. The incredible coherence also makes it possible to pack enormous power in a laser beam which can be used to cut or weld metal.

The wavelength, or colour, of a laser beam depends on the nature of the light-emitting medium. For example, the earliest laser used a rod of ruby and emitted a red coloured beam, later developments have made it possible to produce laser beams of almost any colour. In a liquid laser, for example, the colour of the beam can vary over a wide range by the use of organic dyes. A carbon dioxide laser, on the other hand, emits in the invisible infra-red wavelength. Research is underway to develop an X-ray laser which could revolutionize our view of the world.

Uses of lasers

Although the laser was invented 25 years ago, its commercial applications are relatively recent. During much of the sixties and seventies, the laser remained a disappointment, a fascinating scientific toy that had few practical applications. In the 1980s, however, the situation changed, uses for lasers sprang up almost in every sphere of industrial activity. Today they are used in communication, computers, cutting, welding, shaping, and other industrial operations, pollution monitoring, and in surgery.

The use of lasers in communication has many advantages, the most important among them being its extremely high signal carrying capacity. For instance, today's microwave system can simultaneously carry about 12,000 voice channels. But if a laser beam is used in place of microwave as the communication link, it would be possible to transmit hundreds of thousands of television programmes or the entire telephone traffic of our planet or a single beam. Already, laser-based communication links using optical fibres as carriers are in operation in many countries. They are much superior to the conventional cable-based links and are cheaper to run.

The use of laser in computers stems from the fact that light can carry information faster than metallic wire. With the rapid growth of computer technology a stage has now come when computers can carry out calculations faster than their wires can carry information. So, engineers are working on new computers that use fibre optic cables rather than wires for speedier information transmission. The laser can handle information much faster than magnetic tape because the data becomes part of the laser beam itself and can be stripped from the light as fast as it passes.

The high energy that can be packed into a laser beam makes it an ideal tool in industry. Laser beams can cut far more intricate patterns than any blade because they have virtually no thickness, and they never wear out. Laser welds are stronger than traditional ones and can be made much faster. Best of all, almost every laser process can be adapted for automated operation thereby ensuring quality and precision.

The use of laser in a way similar to radar, that is, sending out a light pulse and timing the return of the echo; provides a very accurate method of distance measurement in space as well as on earth. By this mean, the distance of the moon at any time can be calculated to few centimetres. By reflecting laser beams from a special mirror-studded satellite in orbit 5,700 kilometres up, scientists can now measure even the minutest shifts in the earth's crust which may precede a major earthquake.

The extreme coherence and purity of laser beams lend themselves ideally to pollution monitoring. The purity of laser light enables it to seek and sense, from several kilometres away, airborne atoms and molecules of pesticides, toxic gases, power-plant pollutants and other atmospheric contaminants. This is possible because each substance present in the air around us absorbs or reflects light of only a particular wavelength. When a laser beam is passed through a polluted region of the atmosphere, a part of it is absorbed or reflected depending on the nature of the pollutants present, which can be identified from the reflected or scattered echo.

A surgical marvel

As a surgical tool laser has few equals. One of its greatest advantages is the ease with which it can be passed through transparent tissue like the cornea of the eye and focused to an extremely fine point. Another advantage is that the wavelength of the beam can be so chosen as to affect only the target tissue such as a tumour, leaving the surrounding tissue intact. Using microscopes and fibre-optic light guides, surgeons can now destroy tumours in the oesophagus or open up a blocked artery with precision impossible with conventional scalpel. In eye surgery, laser beams focused to a pin-point can weld breaks in the retina or seal leaking blood vessels by a process called photocoagulation. A painless operation called an iridectomy can quickly relieve the excess pressure in the eye of a glaucoma patient. Lasers have been used to treat skin cancer on an experimental basis. Here the laser beam is pinpointed on cancer cells which are quickly destroyed.

An exciting development in the use of laser is holography. It is a method of recording and displaying a three-dimensional image of an object using a laser beam and photographic plates. While recording the image the light from the laser is divided so that a part of it falls directly on the photographic plate. The other part of the beam is reflected from the object onto the same photographic plate. The resultant pattern produced by the interaction between the two beams is recorded on the plate as the hologram. If the hologram is viewed in laser light an almost real three-dimensional image of the original object can be seen. The technique has found several applications in industry especially for obtaining three-dimensional pictures of highspeed moving machinery for non-destructive testing.

Lasers have entered the field of home entertainment as well. Now digital recording techniques have made possible compact discs which can be played using a tiny laser beam as stylus. Apart from much superior quality of the audio output such a system is almost non-destructible as neither the disc nor the stylus can ever wear out. Similar systems have also been developed for video discs.

Use in weapons system

A disturbing trend in the use of lasers in recent years is its use in weapons systems by the superpowers. Already tests have been carried out on the targetting of objects in space by using laser beams from earth. Plans are already afoot for developing systems which would use laser bursts from earth to blind spy satellites in orbit and space-based laser systems which would knock out enemy satellites and possibly even missiles flying through the atmosphere below.

Ever since the first powerful burst came out of ruby laser 25 years ago the miracle beam has done wonders to improve the lot of the common man. It would be unfortunate if future developments turn it into a 'death ray' of mass destruction, as Wells had foreseen almost a hundred years ago. □

(Courtesy . Spotlight, AIR)

BOOKS

World Bank and Development

World Bank and the Third World Countries of Asia by mahendra Pal; Published by National Publishing House, Darya Ganj, New Delhi-110007; pages 407; Price : Rs. 200.

At a time when there is a veiled criticism of the way the World Bank, is shifting its focus from one of offering developmental finance to encouraging more private sector participation and disbursing of conditional loans in the Third World countries, the book under review by a lecturer in economics from a Delhi college has come as a damper. Though the blurb of the book boasts that it offers a "balanced critique" against both leftist and rightist views, much of the criticism levelled against the Bank in the book look hollow as they lack substance.

What robs the book of much of its value is that it is an enlarged and updated form of the author's thesis presented to the Meerut University for a doctoral degree. So most of the details concerning the World Bank were about its organisational structure, evolution and growth since up to 1976. His post script mostly drawn from World Bank 1983 annual report, is a hasty addition that does amplify much of the author's contention Doubtless, the economic milieu of the 1980s and that of the 1990s poses formidable hurdles to the development process and demand different approaches from the largest multi-lateral development body. In the 1940 the Bank was engaged in reconstruction work. In the 1950s and 1960s most of its activities involved assisting nations to develop large-scale infrastructure, such as major power systems. In the 1970s the Bank continued such work, while moving at celerity to broaden its project activities, notably into such areas as health and education and rural development. In fact while the Bank's conventional roles will continue, it will also be playing key roles in the adjustment process, seeking to assist nations to come to terms with the rapid changes in the world economy, get over the hardships emanating from the pernicious recession witnessed in more than four decades and pressing ahead to revive the momentum of development.

The author has raised undue alarm over the erosion of the Bank's independent approach as its policies are seen to be swayed by the United States. If the evolution of new ideas that are currenly held in esteem in many countries is erroneous, then the Bank's new role as a catalyst for development in the still underdeveloped region of the world and its constant efforts to graduate successful countries out of its fold must be grievously wrong. Self-reliance and dependence on external aid forever do not go together and it is this aspect that has been engaging the attention of the Bank authorities of late. As long as the Bank keeps evolving fresh ideas to help those who realy need help and those who help themselves by endeavouring to pursue prudent policies on the supply side instead of relying upon demand management through stifling con-

trols and rigorous regulations, the World Bank's prescriptions deserve no rebuke. Mr. Pal has ignored this aspect and made a vain attempt to criticise the Bank from the parochial focus of Third World politician rather than from a disinterested stance of a scholar.

G. Srinivasan

Battle against poverty

Planning For Poverty Alleviation · By Kamta Prashad; Agricole Publishing Academy, New Delhi; pp. 228+xii, price Rs. 150.

The need to alleviate poverty has become a matter of urgent concern for all of us The book brings out that, while we have achieved break-through in certain areas, the magnitude of the problem calls for greater effort on our part although several measures have already been taken. 'Why? And what improvements are possible?' are the most important questions before us today The significance of the book lies in the fact that it is mostly concerned with these very questions. The book attempts to provide a review of the strategies and policies followed until the Sixth Five Year Plan for alleviation of poverty and suggests new policy measures that should be considered for the alleviation of poverty

Although the book represents the culmination of academic efforts of the author, over a period of time. it claims to be self-contained and is divided into three parts. Part I, consisting of three chapters provides background information on concepts of poverty, magnitude and incidence of poverty in India, and the concentration and composition of the poor by social groups, rural-urban, etc Part II, comprising Chapters 4 to 10 deals with appraisal of poverty alleviation policies and programmes The first three chapters in this part examine the role assigned to poverty alleviation as an objective of planning, give a hurried survey of all the important anti-poverty measures and provide a general assessment of their impact. The next four Chapters in this part (Chapters 7 to 10) give an analysis of reasons for the limited effectiveness of anti-poverty programmes in a general way. These are attributed to certain deficiencies including inadequate allocation of resources and weak delivery system for the weaker sections

Part III, consisting of 11 Chapters gives an outline of future strategy suggested by the author for alleviating poverty in the next ten years and advocates a case for assigning priority to the objective of poverty alleviation consistent with that of growth. Chapter 12 discusses several basic issues concerning poverty-focused strategy. Chapters 13 to 15 examine scope for policy options related to land transfers, employment generation, and some of the beneficiary-oriented programmes and present a few relevant suggestions. Chapters 16 to 18 deal with the question of identification of activity-mix including a policy package for promoting rural industrialisation. While Chapter 19 makes a number of suggestions for improving planning capabilities at local levels, Chapter 20 discusses measures for better implementation. Chapter 21 gives a summary of the approach advocated by the author.

This book deals, in a comprehensive manner, with the various aspects of the poverty alleviation programmes and tries to provide a systematic approach to the problem of poverty. The author has made a number of suggestions covering both economic and administrative aspects at both macro and micro levels. He has also spelt out the various implications of the strategy advocated by him and suggests operational details.

The book is a welcome addition to the literature on poverty in India

Dr. B. N. Sahay

Management and Development

Managerial Economics; by R. L. Varshney and K. L. Maheshwari; Published : Sultan Chand & Sons, New Delhi.

Price Rs. 33

Management and development are two interrelated concepts in the modern world of giant-sized corporations. For each corporation there is a corresponding organisational-administrative set-up appropriate for its smooth functioning. There are various levels of management, each with its appropriate kind of technique. Each management technique is applicable to a range of output It is the application of economic theory in evolving this management technique which is the subject matter of the book, "Managerial Economics" by Varshney and Maheshwari.

The book is divided into nine sections and an appendix with supplementary notes and tables towards the end of the book. For any student of management science or a professional manager, first four sections (I to IV) of the book will prove to be an exercise in futility as the chapters in these sections deal basically with fundamental concepts in economic theory—these are already broadly known to a professional or a student of management. A somewhat interesting reading starts from Section V-"Pricing Policies and Practices"; so vital an area of decision making process. The authors have done well by giving "Fundamentals Which May Affect Decisions" in an appedix form, of course adapted from H.O. Huegy's "Price Decisions and Marketing Policies". Though the treatment is sketchy, yet it gives a broad outline of the information for "scientific pricing decisions". In the modern management science efficiency of the management is seen in its

ability to allocate firm's resources in an optimum manner. The authors would have done well if they had introduced the chapter on Linear Programming combining it with the chapter on "Pricing Policies and Practices" because the problem of resource allocation—a subject of Linear Programming—can be understood in a better way when studied with price-mechanism The theme in chapters of sections VII and VIII mainly dwells on subjects which are very important from the viewpoint of the corporate world. It may not be as important or useful in the third world developing countries as it is in developed ones. However, the authors seem to have treated the subject only briefly! With the growth of information science, computer technology, etc., the usefulness and the scope of the subject dealt herewith has greatly widened. Economic forecasting has become easy in this high risk-bearing, speculative world of business. Though these concepts are new for a developing country like India, they do need a detailed treatment in view of their growing importance, especially as India enters the 21st century with a growing capital market.

A major portion of the book is a presentation of ideas and concepts and explanations thereof. The case material and review questions given at the end should have been integrated with theory to highlight the important point.

Aditya Kumar Trivedi

India's trade with Far-East

India,s Trade with Asia and the Far-East countries by Professor B. Satyanarayan; B. R Publishing Corporation 461, Vivekanand Nagar, New Delhi-110052. 1986; pp. xi + 212, Price—Rs. 125

The trade flows of developing countries, especially their exports of value-added and manufactured items to the developed countries are affected adversely as the general level of protectionism is on the increase and the international economic and trade environment is beset with a number of irregularities and unpredictable situations. The need for promoting of economic, technical and trading cooperation among developing countries is strongly felt mainly to safeguard themselves from unfavourable terms of trade and low bargaining power vis-a-vis the developed countries.

A number of analytical techniques such as 'Market share analyses', 'Gravity models', 'Indices of Intra-industry', etc., have been applied by the researchers and the analyses from time to time to address these and other trade and development issues of developing countries. In the present work, the author analysed various variables of economic growth to determine India's capacity to export and import wi special reference to ESCAP countries. By applyi the methodology of linking up the problems ar prospects of India's international trade with its lon term development issues with the help of Tw economy input-output matrices, the author adv cates that "The long-term trade strategy should be t export our non-bottleneck goods for importing th bottleneck goods. ....India should be ab to develop middle range techniques which will b come useful not only to its domestic economy bu also to the ESCAP region, once they are exported' The basic model underlying the analysis is provide in chapters I and II. The author's main objectiv was to apply Robinsonean Economic Theory c Accumulation to the problems of correcting struc tural disequilibria through a platinum age growt strategy.

The analysis contained in Chapters III throug VIII, provide the details of export profile and impor profile of India as relevant to ESCAP region. Chap ter IX contains the conclusions of the study. Th important conclusions are : " . . . if one adjust one's international trade strategy to the demands o the foreign trade on the principles of long-term stra tegy of growth than internally, it will be possible t satisfy its own short-term needs but also it will b able to develop itself as a market leader in the inter national trade in the long run. The long-term link ages are also provided in the form of production i advance of those goods as per the projected require ments of other countries importing them"

Thus, the analytical frame and the conclusions of the book are relevant to the trade and develop ment problems of the developing world especially towards strengthening regional cooperation among ASEAN, ESCAP and SARC countries in Asia and Far-East. □

J. Rajeswarrao

(Continued from page 22)

(7) The repayment performance of bank loans is satisfactory for all categories of families. The advancing of loans to weaker sections of the rural society by the banks do not necessarily lead to an accumulation of bad debts. Proper supervision by the bank can further improve the repayment performance of loans. Action should be taken to prevent wilful defaults.

Female literacy programme makes headway

A NUMBER OF SPECIAL MEASURES are being taken to improve literacy among women in the country. As a first step the State Governments/ Union Territories have been specially advised to ensure that at least 50% of the learners in adult education centres are women. They have also been requested to establish adult education centres in the villages where Scheduled Castes and Scheduled Tribes form the majority.

Voluntary organisations are also being encouraged to run literacy centres exclusively for women. Grant-in-aid rules have been relaxed to permit voluntary agencies working in the field of adult education to take up a minimum number of five centres against the normal practice of running thirty centres.

It has been observed that the measures taken over the years to improve female literacy have yielded fruitful results. About 10 million adult female illiterates were enrolled out of total coverage of nearly 23 million during the Sixth Five Year Plan (1980-81 to 1984-85). During 1985-86, against the stipulated target of enrolment of 75.46 lakhs, 70.36 lakh learners were enrolled by the end of December, 1985. Of this more than 54% (38.14 lakh) were women.

During the Sixth Plan, an expenditure of Rs. 96.00 crore was incurred on Adult Education Programme under central sector which included expenditure on adult literacy for women. An outlay of Rs. 130 crore has been provided for adult education programme for Seventh Five Year Plan, out of which substantive amount is likely to be incurred on female adult literacy. □

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Crop Insurance scheme becomes popular

THE COMPREHENSIVE CROP INSURANCE SCHEME introduced by the Government from kharif 1985 is functioning effectively and gaining popularity. To begin with 12 States and 1 Union Territory implemented the scheme. These are: Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal and Pondicherry. Haryana, however, opted out of the scheme later on.

The General Insurance Corporation (GIC) received proposals worth Rs. 540.49 crore as sum insured covering an area of about 42 lakh hectares.

During Rabi 1985-86, 11 States and 1 Union Territory have so far sent to the Corporation proposals amounting to Rs. 32.91 crore as sum insured covering an area of about 2.55 lakh hectares upto February 15, 1986. The States and Union Territory are: Andhra Pradesh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Rajasthan, Uttar Pradesh, West Bengal and Pondicherry. ☐

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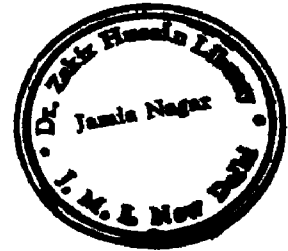
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NEXT ISSUE

Plight of farm labourers

Record agricultural production in 1985-86

FOODGRAIN PRODUCTION IS LIKELY TO touch a new high of 150 million tonnes during 1985-86. Record production levels of rice and wheat are expected to be achieved. Against this, there would be a little fall in the production of coarse grains because of the inadequate rainfall. Drought also affected the production of oilseeds, particularly groundnut, though a record production was achieved in oilseeds like mustard, soyabeans, safflower and sunflower. The cotton and the jute crops were also a record during the year.

A target of 160 million tonnes of foodgrains has been set for the year 1986-87. The oilseeds production target will be of 14.8 million tonnes and for sugarcane 185 million tonnes. The Ministry of Agriculture is giving final touches to crop production plans through a series of meeting with all the States and Union Territories.

Indigenous production of fertilizers also showed an upward trend during the year 1985-86, i.e., 57.6 lakh tonnes as against 51.81 lakh tonnes during 1984-85, thus showing an increase of over 11 per cent. It is expected to rise further to a new record level of 69.5 lakh tonnes in the current financial year. The favourable supply trend during 1985-86 helped cut fertiliser import by about eight lakh tonnes, thus saving valuable foreign exchange.

The cooperative institutions also lent support to agricultural production programme during 1985-86, disbursing a record loan of Rs. 3,757 crore to farmers.□

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Environment protection, a many-faceted problem

Biman Basu

The problem of environmental degradation is very complex and, according to the author, there can be no single solution. Any viable strategy, he says, must take into account not only the physical nature of the problem but also the human factor involved. Moreover, mere legislation can never be a solution unless it is enforced strictly. If our environment is to be saved from further degradation, then, there is urgent need to remove lacunae in the implementation of environment protection laws. Otherwise, the author feels, the vast majority will continue to pay the price for the misdeeds of a recalcitrant few.

EVERY YEAR THE 5TH of June is observed as World Environment Day to focus public attention on the rapid degradation of the world's environment. The occasion is generally marked by holding of seminars and exhibitions, publication of special articles in newspapers and broadcast of special programmes on the radio and television, all aimed at a single goal—that of creating an awareness about the environment. Yet, despite these annual exercises, protection of the environment still remains by and large a little understood subject. Most people are not aware of the multifaceted nature of the problem. They don't understand that it is not mere protection of a few animal or plant species, or planting of trees, or the shutting off of big polluting industries, or the simple cleaning up of the environment that constitutes environmental protection. It is a combination of all these It is like the proverbial case of the elephant and the blind men—one cannot understand it unless one looks at it in its totality.

Biosphere protection

Of immediate concern to anyone interested in protecting the environment is the biosphere—the delicate layer of soil, water and air upon the surface of the earth within which all life exists and of which it forms a part. The nature of the air, water and soil in the biosphere is constantly being changed through their interaction with living things, and living things are in turn dependent upon the physical environment which they help create and maintain. The two are so closely interlinked that any drastic change in one can lead to far-reaching changes in the other, often to the detriment of both.

Man's activities affect his environment in many ways. Some activities like mining and quarrying for minerals, felling of trees for timber and fuelwood, clearing of forest areas for agriculture degrade the soil; other activities like burning of fossil fuel in industries and homes pollute the air; widespread use of agricultural chemicals and pesticides and indiscriminate discharge of effluents from industries pollute water resources; indiscriminate hunting of wildlife species upsets the balance of nature often endangering useful species of animals.

Loss of soil

One of the worst affected components of the biosphere is the soil which forms the main feeding zone for plants and on which all life ultimately depends.

Hundreds of thousands of tonnes of rich topsoil are lost every year by erosion due to faulty landuse by man. In India, it is estimated that at least 175 million hectares (constituting 53 per cent of India's total land area) are susceptible to serious soil degradation. Of the total cultivated area of about 140 million hectares, nearly 60 per cent needs immediate soil conservation measures. According to one estimate, every six months more soil gets washed away in India than has been used to build all the brick houses from Kashmir to Kanyakumari and Kutch to Kohima!

One of the most common causes of soil degradation in India is ill-managed irrigation. Irrigation canals bring to farmers the most important input for increased agricultural production. But they also have the potential to turn green fields into water-logged and saline wastelands. Nearly seven million hectares of land are reported to have gone out of production in India in the past few years because of severe salinity and an additional six million hectares are lying seriously affected by waterlogging.

Desertification

Another threatening effect of man's evergrowing demand for food, shelter and energy on soil is the alarming rate of desertification in many parts of the world. Contrary to popular belief, desertifiation is not merely conversion of fertile land into sandy waste, but a gradual process by which fertile lands lose their biological productivity due to indiscriminate cutting of trees, overgrazing by cattle and removal of rich top soil for non-agricultural uses such as brick-making. Sometimes desertification may be taking place thousands of kilometres away from 'true' deserts. What is more, it is not only lack of water but sometimes even excess of water that is responsible for loss of productivity of land. One point to remember here is that compared to desert areas in other parts of the world, India's arid areas are more problem-prone. This is because, with a population density of more than 70 per sq. km., Indian deserts are among world's most highly populated desert areas.

Law enforcement, no remedy

The simplest way to prevent indiscriminate felling of trees, many people wrongly believe, is by strict enforcement of Forest Protection Laws. But such measures cannot prevent denudation of forest areas if they do not at the same time take into account the basic needs of the people, namely, food, fodder and fuel. In many far-flung areas of the country, especially in the hill areas, people cut trees for two purposes—the trees provide firewood and the land cleared can be used for growing food and fodder which they are unable to get from any other source. Unless these people are provided with alternative supplies of these commodities our forest trees will continue to be cut. What is needed is an ecological movement that will satisfy the minimum needs of the people.

Water pollution

The second important component of the biosphere is water. India has ample water resources but most of it is highly polluted. According to a survey by the National Environmental Engineering Research Institute, a staggering 70 per cent of the available water in India is polluted. Community wastes from human settlements account for four to five times as much waste water as industrial effluents. Most of these wastes are discharged untreated into the water courses. The magnitude of the problem is evident from the fact that, out of 3119 towns and cities in the country, only 217 have partial or full sewerage and sewage treatment facilities. These cover less than a third of the total urban population.

The implications of such massive pollution for the health of the nation are obvious. According to one estimate, two-thirds of all illnesses in India are related to water borne diseases such as typhoid, diarrhoea and dysentery. Many of them frequently assume epidemic proportions.

Water pollution also severely affects aquatic life. Occurrence of massive fish kills and the destruction of aquatic habitats due to industrial pollutants have become a common feature in many parts of India. Fish catches in many rivers have gone down sharply due to high pollution levels.

The recent setting up of the Central Ganga Authority to cleanse the polluted Ganga has been a welcome development although at best it can mitigate only a small part of the problem. This is because the river is no isolated entity, but part of a much larger geographical unit—the Ganga basin—with innumerable tributaries that drain into the great river. These tributaries contribute their own share to the overall pollution load of the Ganga. Soil erosion in the catchment areas add significantly to the silt load of the river, which increases the pollution problem. Unless all these factors are also taken into account in the scheme of things, the clean-up would at best be partial.

A significant omission in the action plan is the absence of any concrete scheme to minimise industrial pollution. The existing pollution control laws have too many loopholes. Any clean-up plan would be meaningless if industries go on dumping their toxic waste in the river because there is no one to stop them.

Air pollution

The third major component of the biosphere is air without which no life can survive (except some lower forms of bacteria). Without air of good quality there cannot be a healthy life. Yet clean air is a rare commodity today, especially in our big cities and towns. Human activities like, industiral producton, motor transport and burning of fossil fuels are the major causes of air pollution.

The trouble with air pollution is that one cannot escape from it. If water is polluted one can avoid drinking it, or may drink it after purification. But one cannot avoid breathing polluted air; one has to take it as it comes.

One of the major problems in dealing with air pollution is that most of what constitutes it is invisible. For instance, black smoke from factory chimney or exhaust fumes from motor vehicles can be seen and hence easy to control. But these form only a small fraction of the pollutants and are relatively less harmful. It is more difficult to identify many of the potentially more dangerous gases which may not be noticeable in normal atmospheric conditions. These include carbon monoxide, sulphur dioxide, nitrogen oxides and cancer-procduing hydrocarbons which can be detected only with special instruments.

Smoke

A surprising fact about air pollution in Indian cities is that although the number of motor vehicles in them is far less than in cities in the West, the pollution level is almost the same. This is mainly due to lack of maintenance of Indian cars and the absence of any effective deterrent to plying such cars on city roads. For instance, according to specifications prescribed by the Indian Standards Institution, vehicles powered by spark ignition engine should not emit carbon monoxide exceeding 3 per cent by volume of exhaust gases, and vehicles which are more than 5 years old should not emit carbon monoxide more than 4.5 per cent by volume. But tests conducted by the Central Board for the Prevention and Control of Water Pollution (which also takes care of air pollution) in Delhi have shown that only about 38 per cent of the two-wheelers, 53 per cent of the three-wheelers and 24 per cent of the four-wheelers met these requirements. The rest emitted far higher amounts of carbon monoxide.

Another study in Delhi has shown that most of the busy traffic junctions in the city are highly polluted by vehicle exhausts. In all the eight junctions at which monitoring was done, the pollution levels were found to be far above the prescribed safe limits. While the concentration of suspended particulate matter (mainly soot) was found to be two to five times the safe limit, that of carbon monoxide exceeded twice the safe limit. The study also found that almost all buses and trucks emitted smoke in concentration far above the permissible limits.

Thermal plants

After vehicular emissions, the second major source of air pollution in Indian cities are the thermal power plants many of which are located right in the heart of the major cities. Thermal power plants in the country are entirely coal fired and although the coal used in these plants is low in sulphur, it has a high ash content—often upto 40 per cent. So pollution from these plants comes mainly as fly ash although sulphur dioxide emission is also substantial. For instance, the two major power stations in Delhi together produce about 175 tonnes of fly ash and give off 70 tonnes of sulphur dioxide every day. Even electrostatic precipitators are unable to cope with such high volume of fly ash and a substantial amount is let out into the atmosphere.

Fly ash is not only a nuisance as it covers everything with a coat of dirty gray, it is also a major health hazard. Prolonged exposure to fly ash is known to cause respiratory diseases including tuberculosis.

The irony of the air pollution problem in Indian cities is that they are mostly the result of negligence or callousness. Motorists keep driving ramshakle cars because they are not bothered about how much smoke it emits or how much danger it poses to other people's health. Law enforcing authorities do not prosecute people drivnig such vehicles because either they are not bothered or they don't have enough powers to haul up erring drivers. In any case, despite the Central Air (Prevention and Control of Pollution) Act, 1981, being there, Indian cities today are among the most polluted cities in the world.

These energy needs

The problem of energy and environmental pollution are interlinked everywhere. But the situation in the developing Third World countries is different from that of the developed countries. Problems like air pollution caused by burning of fossil fuels and exhaust fumes from cars are common to both. But developing countries have also to cope with the enormous task of providing energy source for the vast rural population. At present this is provided mostly by firewood, but indiscriminate denudation of forests has already wrought havoc with our land. So alternative sources of energy for the rural sector have to be found if the forests are to be saved without causing hardship to those who depend on them for fuel. High-efficiency woodstoves, gobar gas plants and solar cookers are some alternatives which have been tried out with success. But they have yet to gain general public acceptance. Unless that happens the forests would continue to be cut for fuel.

To sum up, the problem of environmental degradation is a complex one of which there can be no single solution. Any viable strategy must take into account not only the physical nature of the problems but also the human factors involved. Last of all, mere legislation can never be enough unless it is enforced strictly. As the noted naturalist Dr. Salim Ali commented the other day, "India has the most comprehensive nature protection laws in the world, but it has also the least effective machinery to enforce them." If India's environment is to be saved from further degradation, there is urgent need to remove the lacunae. Otherwise the vast majority will continue to pay the price for the misdeeds of a recalcitrant minority

Neo-technology for protecting environment

K. C. Sahu

Application of higher technology to conquer nature at the cost of survival, according to the author, is perverse. He says today's conspicuous consumerism has led to ostentatious life style leading to indiscriminate exploitation of earth's resources and lack of respect for nature. He advocates neo-technology, i.e., evolving small scale technology—nonviolent in nature, less harmful to natural environment and having soothing effect on the society and environment. Here he questions not the 'technological progress' but what he calls the 'blind progress'.

WITH THE DISCOVERY of Copernicus the homocentricity of the cosmic onion, a myth of the western philosophy, peeled off and Man, as always been proposed by accidental mind, turned into a mere insignificant element of nature and natural environment No wonder, the concept of western protodogma, that man is the centre of universe and has the god given right to use and abuse "his universe", emerged as modern technology and grew up into a supertechnology, a culture which today permeates the whole environment in the interphase of atmosphere, hydrosphere and lithosphere and has even shot up into extraterrestrial space

Pangs of modernity

The total environment is a dynamic system and consists of compartments (land, water and air), sectors (forest, wildlife, and man) and subsectors (industry and society). Natural changes in each compartment, sector or subsector, being slow and nonviolent, the intracompartmental stresses produced therein are automatically balanced by intercompartmental transmission of microscism The stresses are self-balancing However the culture of modern technology having no self-limiting principle in terms of size, speed and violence, and being infinite in scale, discordant to nature as well as discriminatory to sectoral development, results in degradation of environment as well as in differential accumulation of environmental stresses in compartments and sectors On exceeding the stress limit, the system ruptures resulting in catastrophe, disaster or tragedy, so common in man and technology dominated modern society. While accumulation of degradational stress can be conceived by analysis of trends and responses, the disasters like Minamata tragedy, Bhopal episode, Ethiopian famine, wars and riots, analogous to any lithospheric earthquake (ex release of crustal stress along San Andreas Fault) become apparently cognisable only after its occurrence and the intensity of damage measured in a suitable scale to assign the degree to the catastrophe

Modern technology

To ensure the continuation of modern civilization and political idealogy upon which our culture is founded, to support an ever increasing world population and to increase the "quality of life" man is bound to interfere with nature by large scale industrial activities with modern machineries and equipments, advanced methods and techniques so that resources are exploited in the spirit of Dr Mansholt's watchwords such as more, larger, speedier, further, quicker and richer, upto the point of no return (Harrison Brown, 1958) The people of "forward stampede" emphatically advocate that the philosorphy of "enjoying" pastoral culture by the "homecomer" is basically due to the consumption, demand and market, created by

the modern technological society. Like the words of the Grand Inquisitor of Dostoyevsky "Why have you come to hinder us ?", they point to "population explosion and world hunger", that "poisonous food is better than death due to starvation", "if world resource finishes, we shall turn to synthetics" and "if coal and oil gets exhausted we shall turn to nuclear fission or fusion", etc. For the super-technology "Breakthrough a day keeps the crisis at bay".

Its effects

There is nothing in the experience of the last decades to suggest that such large scale operation is really helping us to alleviate world poverty not to mention of unemployment. At the end of every five-year plan our unemployment list is larger, our larger operations are in red without even taken care of consumption of the godly assets, the primary capitals. Already the environment is trying to tell us that certain stresses are becoming excessive around regions of large technological ventures. As one problem is being "solved" ten new problems arise as a result of the first "solution". As Prof Barry Commoner emphasised, the new problems are not the consequence of incidental failure but of technological success. The Population growth, the DDT and pesticide accumulation, temperature inversion and carbondioxide balance, oxygen depletion, the space debris the nuclear waste disposal and lastly the drudgery of drug addiction of our modern youth in an affluent society are not failure of technology but products of it. The breakthrough in technology has broken the backbone of human civilization because its primary aim is to enhance the quality of the products and devalue the producer to plastic man

Self-balancing nature

There is a measure in all natural things—in their size, speed or even violence-which makes all natural systems of which man is a part, tending to be self-balancing, self-adjusting and self-cleansing. Not so with technology or man dominated by technology and specialization which recognises no self-limiting principles in terms of size, speed or violence. Thus in a subtle system of nature all forms of "giantism" are foreign bodies or antibodies and there are numerous signs of their rejection

While science or knowledge is "neutral" the methods or aims of the applicator of higher technology to fight against or conquer nature even at the cost of survival is perverse and application of knowledge (technology) without wisdom (foresight) is doomed to failure. Churchill once rightly remarked "the trouble about man is that he can not look beyond what he can see".

All violent and discordant adventure of technological achievements till today have been beset with nature's checks and balances (Francis Bacon) and ability to hold the balance of nature in temporary abeyance is never a licence to man to consider earth as his legitimate quarry. The question is has industrial culture gained a measure of control over the basic factor that makes such vicious change of second and third order in various sectors of the ecosystem ? No technologists can answer this.

Mordern technological society by virtue of its mass production, transport and communication and media advertisement-Aldous Huxley calls it "Silly or pernicious adult education provided by the mass producers of consumer goods"—encourages conspicuous consumerism for its own existence, leading to an ostentatious life style where need is taken over by greed. The luxuries of fore-fathers become basic necessasities of life and this has led to indiscriminate exploitation of earth's resources and lack of respect to nature. Instead of surviving on it, as an infant baby does on mother, man is apparently milking the mother earth (S Bahuguna, 1984)—a poor life style indeed. The modern technology has come as a handy tool for this purpose

Neo-technology

It is possible to give a new direction to the technological development based on needs of the man, definitely not on his greed (Gandhi), because the former is small, limited and natural but the later is infinite, unlimited and unnatural. In industry we can interest ourselves in evolution of a small scale technology, relatively nonviolent technology, "Technology with human face" (Schumacher) so that people have a chance to enjoy themselves while they are working instead of working solely for their pay pocket and hoping for enjoyment solely during their leisure time. The incentive of the 5-day week of the industrialised society will neither increase the fulfilment of the workers nor its transfer (technological ?) to a developing country like India will have any intelligent meaning. In that case we need to find a 5-day cow and 5-day house-wife to run our home-industry all over the country

Small scale technology

Small scale operations no matter how numerous, are always less likely to be harmful to natural environment than large scale ones, simply because their individual forces is small in relation to the recuperative forces of nature (Prof Leopold Khor) Technology in small scale has a tremendous soothing effect to the society and environment. The capital instensive high technology of megalomaniac industries, concentrated in a fewer work places and consequent urbanization—the modern days' Juggernaut—invariably leads to breakdown of the rural structure and at the same time brings about chaos in the work place, a term used by Schumacher as "mutual poisoning". On the other hand small scale technology prefers to establish a large number of labour intensive work-places for

local hands thereby discourage migration (push effect) or attraction (pull effect) of people. It not only discourages "foot-looseness" amongst people but also prevents mass movement of goods. Just as modern economy would admit that high rate of consumption of transport services between a man's home and his work place signifies misfortune and not a high standard of living, so also to satisfy human wants from far away sources rather than from sources nearby signifies failure rather than success (Guy Wint, 1966) While fast transport and instantaneous communication has opened up new dimension of freedom (in trival aspect) it is dangerous to overlook the fact that this achievement has destroyed human freedom by making everything extremely vulnerable and insecure due to its fast destructive effects in every scale : family, society, rural hinterland, cities and finally nations.

Its benefits

Small scale technology gives higher value to man the producer, to his labour and creativeness than to goods and machines. All along the history of technology, great men, social reformers, economists, religious leaders and philosophers have insistently and warningly spoken of man and machine and the effect of one replacing the other "If we feel the need of machine we certainly will have them, every machine that helps every individual has a place" said Gandhi, but there should be no place for machine that concentrates power in a few hands and turns the mass into machine, if indeed they do not make them unemployed. "When the process of production takes away from work any hint of humanity making of it a merely mechanical activity (Roman Potiff-Pius XI), no amount of "bread and circus" (Dorothy L. Sayer) can compensate the damage done by such technological achievements

Feeling of belonging

The system of mass production based on sophisticated highly capital intensive, high energy-input dependent and human labour saving technology is like the classic eulogised Adam Smith's Pin Factory (in Wealth of Nation) where the final product can be produced at a great speed without any one having had to contribute more than a totally insignificant and in most cases unskilled movement of his limbs The potent methods of automation is load reduction by elimination of human factor Because machines do not make mistakes while people do and machines have no freedom, need no attention, therefore labour is an unwanted item of cost who, on the other hand, feels that he sells his effort and leisure only for his pay packet without enjoying the production process or contributing his creativity Thus from the factory "dead matter goes out improved but men there are degraded and corrupted" Contrary to this the neotechnology which aims at providing small autonomous units, where man develops a feeling of belonging, the activity his personal affairs, for example his own land, his kitchen garden and his own "family factory", ultimately brings peace and permanance, develops quality of life, belongingness and respect to all the elements of nature Thus neotechnology, while discouraging giantism attempts to provide a buffer or even corrects the degradation of the environment produced by technological adventure.

The adoption of neotechnology does not mean "going back to the forest"; it is a means to grind the rough edges of the high technology which has been fast degrading various sectors of the environment and has brought in "Pin pricks" An intelligent nation can always grow forest around, instead of going back into it The conflict is not high versus small ventures in technology or super versus intermediate technology, but the true problem of living in any sphere, is the problem of reconciliation of extremes. Prof. D. R Gadgil has outlined three modes of approach to the development of intermediate technology, (a) . by starting with the existing traditional technology, (b) by transfer of the advanced technology to adopt and adjust to local framework and (c) · by investigation to develop an intermediate scale of operation with limiting socio-economic circumstances.

It's our responsibility

Thus the history of civilization is the history of development and application of knowledge (call it technology) Although the ultimate destiny of mankind is already decided in the evolutionary clock, it is for us as the leader of this spacecraft, to steer clear of all the environmental crisis—come storm or rain This planet is our home, our abode—its use and reuse its respect or care, its repair and maintenance, upbringing of its habitats such as wildlife, like members of a large joint family, is entirely vested on us as guardian or captain of this ship No other species can do it for us It is therefore extremely crucial and necessary for us to stop, look and listen to the trends and responses of the environment due to our technological applications, before advancing to a point of no return. Let the force, which has made us steer this space-craft, help and guide us "to light amidst the encircling technological gloom"

The spirit of the present paper is not a blind opposition to technological "progress" but an enquiry into "blind progress" □

This bogey of environment protection!

V. M. Mohanraj

Today the environmentalists are crying 'the wolf' over environment protection, but, according to the author, they fail to realise that the bogey of environmental pollution is actually a subtle ploy of the neo-colonial powers to continue their stranglehold over the global economy by hampering the industrialisation process in the Third World countries. Industrialisation, he feels, is not basically antagonistic to environmental safety. What is required today is installation of modern scientific pollution control devices and the proper administration of our anti-pollution laws.

TODAY THE ENVIRONMENTALISTS are demanding dismantling of all the existing industrial units on the ground that effluents from these pollute the surroundings endangering life in the neighbourhood. However, industrialisation is a part of the struggle being waged by man to make the world a better place for him to live in, but it certainly cannot be denied that waste materials ejected from factories are, in most cases, pollutants that cause irreparable damage to the environment. The solution to this problem, however, does not lie in liquidating the factories that have sprung up all over the world since the advent of the Industrial Revolution; nor does it lie in declaring a moratorium on industrial growth in the developing countries.

Industrial development in the post-Second World War period is proceeding at a pace that has no parallel in history, and in the process some countries have forged far ahead of the others that were already industrially deficient, having been colonialised till then. Whatever may be the reasons for this lopsided development, those that lag behind have necessarily to overcome their handicap and catch up with the advanced countries, lest the existing chasm continues as it is or possibly widens further, threatening the economic as well as the political independence of the backward countries. The advanced countries, on the other hand, want this disparity to be maintained in order that the market for their industrial products remains in tact. That, in one word, is neo-colonialism.

A neo-colonial play

The bogey of environment pollution is a subtle play of the neo-colonial nations to safeguard their market against its erosion by industrialisation of the backward countries. And it is an open secret that if any of those countries which constitute the market tries to assert its political independence to industrialise itself, the neo-colonialists resort to either armtwisting tactics or naked aggression as many a developing country has been subjected to in the last four decades.

It is no exaggeration to say that most of the Third World countries, owing to their industrial retardation, are economically a century or more—perhaps, a millennium in certain cases—behind the developed countries of the Old and the New Worlds. India, no doubt, is one of the economically backward countries, notwithstanding the remarkable headway made, since the attainment of independence, in the sphere of industrialisation. To bridge the gap, we have still a long way to go and as such the most sophisticated industrial apparatus has to be set up in the shortest time possible. But the propaganda of the environmentalists against industrialisation is likely to inhibit our industrial growth. The unfortunate Bhopal catastrophe

—indeed, the most horrendous and tragic accident in the industrial history of the world—has now given the environmentalists a convenient handle to unleash a diatribe against industrial developmental programmes in our country, thus unwittingly vociferating what the neo-colonial nations desire secretly.

The International Labour Organisation, in its report entitled 'Safety and Health Practices of Multinational Enterprises', published in August 1984, points out that about nine million people were injured, 24000 of them fatally, in 1983 as a result of on-the-job accidents in 64 countries. Adverting to industrial accidents in general, the report states : "It became clear in discussions with trade union representatives that the needs for basic safety and health education were far from being fulfilled in the developing countries". The report draws attention to the "increasing number of potential hazards to which workers are becoming vulnerable" and adds that "of some 45000 to 50000 chemical substances available on the market, international standards for safety level exposure have only been established up to the present time for less than 2000". Nonetheless, those reported industrial accidents and the possibilities of environmental pollution jeopardizing the health and life of not only the millions of workers directly involved but also the other inhabitants of the earth, have significantly, not impelled the developed nations to abandon their existing industrial plants. On the other hand, they have been steadily expanding their vast industrial net-work while sermonising without a qualm, to the developing countries on the evils of proliferation of industries.

It may not be irrelevant here to point out that pollution caused by industrial discharge is not a problem that has suddenly cropped up just a couple of years back or in this century, although lately it has become rather acute. The problem was there and the awareness too, even in the last century, as is evident from Iben's Play, 'The Enemy of the People'. In that, the Medical Officer of the Baths put up an uncompromising fight against the vested interests at the risk of his job and life when he discovered that "filth oozes down to Baths from the Mill Dale tan-works" tainting the water in the feed-pipes of the pump-room breeding millions of harmful microscopic organisms. It was a health hazard, he said, but he did not want either the tannery or the Baths to be removed from where they were. On the other hand, he suggested laying a conduit to carry off the toxic waste from the Mill Dale. But the Burgomaster of the town, who had an axe to grind, vehemently opposed the suggestion on the plea that "the matter in question is not a purely scientific one; ... It has both a technical and an economic side". The Medical Officer's was a lone voice which got drowned in the well-orchestrated voice of the "confounded, compact liberal majority" cleverly manipulated by the Burgomaster. How wonderful it would be if only our environmentalists take a cue from the Medical Officer ! Today there is a strong public opinion against pollution, which can be whipped up further by our environmentalists to expose and isolate the modern Burgemasters.

Let industries be there

There are, in our country today, numerous factories though not as many as in the USSR, the USA or other highly industrialised countries. We need these and for the betterment of our people, we are planning to have many more factories spread all over this sprawling sub-continent of ours. These factories will certainly spew harmful gases and purge poisonous fluids, defiling our environment. The environmentalists in our country, who denounce industrilisation because it spells pollution, would pause a while to look at the way some of the higly industrialised countries of the world have been tackling the problem of environmental pollution. Apart from legally restraining the factories from indiscriminate disposal of waste materials, the USSR, for example, has a national service, backed by legislative Acts, for monitoring pollution levels in various ecospheres that embrace over 450 towns, 200 natural and artificial bodies of water, inland and surrounding seas and chemically-treated areas of land.

Use anti-pollution devices

Besides, with improved manufacturing processes, the USSR has succeeded in considerably reducing, if not eliminating altogether, hazardous discharges into the environment by factories. Moreover, the smoke puffing up from the flues of factories are filtered electrically or by other processes, which has made it possible "to entrap to as much as 99.5 per cent of dust discharged into the atmosphere" and "industrial aerosols and gases are entrapped and neutralised by catalytic filters, absorbers and other contrivances". Even the industrial waste water is not let out but purified and recirculated by closed-circuit water utilisation systems to be used again. It has also been found viable to operate subsidiary plants to convert to some other substances of utility value, many of the toxic by-products which are otherwise expelled as waste, befouling the environment.

This Soviet government has been setting apart a sizable amount of money in the budget for implementing the nature protection schemes with the result, although industrial production in the USSR today is reported to be much higher than that of the entire world in the early '50s, surprisingly "the state of the environment in the Soviet Union is known to be much better than (that) in many other industrialised countries". The success of these anti-pollution measures, legal and scientific, is due in no small measure to the people's 'eco-consciousness' as much as to the government's insistence that the industrial plants strictly adhere to the legal stipulations for keeping the environment clean.

And proper safety measures

The installation of modern devices for scientific control of pollution entails additional capital outlay that would bring in little returns and private entrepreneurs who dominate the industrial scene in our country, looking for maximum profits with minimum investment would naturally refrain from doing it. That is the crux of the problem which the environmentalists in our country have to come to grips with. Our environmentalists should, therefore, ensure that proper safety measures against pollution are taken by the managements of factories and if they fail to do so, invoke relevant statutory provisions to compel them to fall in line.

Thanks to the ideological ambivalence of our environmentalists, there is no cohesive movement to force the hands of the powers that be or the bureaucracy to put on the dock the profit-minded industrialists who stubbornly refuse to take necessary action to prevent the defilement of our environment. To cite just one instance: The Central Public Health Engineering Institute and the National Environmental Engineering Research Institute had undertaken studies on air quality covering ten of our major cities, the reports of which were published in 1970 and 1979 respectively. It was detected that in 1970 itself, the level of suspended particulate matter, Sulphur dioxide and oxides of Nitrogen far exceeded the maximum level as per standards set by the ISI and over the decade, it escalated steeply. Today, probably, the level must have gone up still further, what with the increasing number of industries. Strangely, neither our environmentalists nor the authorities concerned had lifted and even today, lift-a finger to avert this slow ecocide.

And this, despite local laws for control of air pollution in the form of Smoke Nuisance Acts. We have in fact, no dearth of anti-pollution laws. There are on our statute book, quite a few-the Factories Act 1948, the Insecticides Act 1968, the Water (Prevention and Control of Pollution) Act 1974 and the Air (Prevention and Control of Pollution) Act 1981-that empower the government to prosecute the Company which evades taking required precautions. If these are found inadequate, the government can be pressured to so amend them that we acquire sufficient legal clout to deal with erring managements effectively.

Environment with development

In conclusion, it has to be pointed out that the basic remedy for the manifold ills that beset our country is rapid industrialisation, an inevitable concomitant of which is environmental pollution. And we have to accept it. So instead of decrying industrialisation, it would be more sensible for our environmentalists to recognise the contradiction inherent in the situation and try to grapple with the problems posed by the complex interplay between environment and industrial development. They should vigilantly oversee the enforcement of the existing anti-pollution laws but the thrust of their campaign against pollution should be to force the industries to adopt modern scientific techiques to bring down to the minimum the toxicity of, or convert to useful substances, the industrial wastes. It is misguided ecological strategy to try to protect our environment at the expense of development. Let our slogan be: "Environment with development". □

Iron ore output touches a new high

Iron ore production in the country touched a new high of 44.5 million tonnes during 1985, surpassing by over 2.5 million tonnes the 1984 level of 42 million tonnes. Statewise projections indicate that Goa is the chief iron ore producing territory with 15.3 million tonnes, i.e., 34 per cent of the total production during 1985. It is followed by Madhya Pradesh with 8.6 million tonnes (19 per cent), Bihar and Orissa with 7 million tonnes each (16 per cent), Karnataka with 5.4 million tonnes (12 per cent). The remaining production of 1.2 million tonnes is accounted for by Andhra Pradesh, Maharashtra and Rajasthan.

At present the iron ore reserves of the country are estimated at 13,500 million tonnes. Of this 10,500 million tonnes are haematite and 3,000 million tonnes magnetite. These lie scattered in five distinct areas: Bihar; Orissa; Bailadila, Dali, Rajhara in Madhya Pradesh; Bellary-Hospet in Karnataka; Ratnagiri in Maharashtra; and Goa. With a step-up in the pace of exploration it is expected that there would be substantial increase in the present estimation of reserves.

Indo-British cooperation in coal sector

Britain is to provide India a grant of pond 31 million for the coal-sector under an agreement signed recently between the two countries at New Delhi. The grant will be utilised for the purchase of equipment for specific projects. Some portion of the grant will also be used for the purchase of items not tied to these specific projects.

The Indian side has proposed that Britain should provide technical and financial assistance for the Ghusick underground coking coal mining project in the Raniganj coalfields. It has been decided that the funding of this Project, if taken up, would form a separate aid package.

The J. K. Nagar coal mining project in the Eastern Coalfield has been identified for total electronification to make it a model mine with British assistance. The British side would submit a package offer including detailed specifications of the equipment. □

India's first marine National Park in Gulf of Kutch

Harsukh Shah

India's first marine national park has been established in the Gulf of Kutch near Jamnagar to conserve the coral islands in the area as a part of environmental protection programme. The author, who recently visited the National Park, gives a vivid account of the flora, fauna and a wide varieties of corals found abundantly in the area.

Gujarat has now another 'first' to its credit—a Marine National Park in the Gulf of Kutch near Jamnagar and Okha to ensure protection to the series of Coral islands in the area. It is the first of its kind in the country.

This inter-tidal zone of the Gulf portion is blessed with fantastic array of marine life and variety of birds living peacefully on Coral reefs and Mangrove forest.

It was Mr. James Hornell, a surveyor from the then Ceylon on a special invitation from the erstwhile State of Jamnagar, who disclosed that this Gulf area had much richer marine and land fauna. He surveyed the entire Okhamandal coast in Jamnagar district, and observed that he had never before seen such a rich marine biota in so confined a place. In fact, the then Jamnagar State even developed Pearl fishing industry in this area.

Coral rich area

For many years, the Corals dead and alive were being exploited for manufacturing high quality cement by private parties in this area. Once upon a time, there existed all along the cost a thick forest of Mangrove trees having a height of over 15 to 20 metres. Mangrove trees have typical qualities. By their very height, they are useful in reducing the velocity and the impact of worst cyclones and tidal waves reducing the damage to the land and property of people residing in the coastal areas. This was particularly helpful in view of the fact that even today this area continues to be cyclone-prone. The devastations wrought by severe cyclones in this area and other coastal areas of the adjoining Saurashtra region provide ample proof of this almost every two or three years.

Another quality of Mangrove trees is their capacity to absorb sea salt and prevent ingress of salinity in the fertile land. Today, the entire Saurashtra-Kutch sea coast is already experiencing the menace of salinity ingress ruining horticulture and fertile farm lands.

A visit by to the Pirotan island, second largest of the 42 islands, in the Marine National Park, reveals that only one solitary tree is standing as a 'lone ranger' on the coast where there was once a thick forest.

Mangrove trees

The entire coast of this island is now left with small Mangrove trees. It is interesting to know how the word 'Pirotan' has become popular. In fact, just near the sea coast, there is a 'Pir' which is being worshipped by Vagher—one of the Muslim communities of the area. The original word 'Pir-jo-than' which in local Kutchhi dialect means 'where Pir has his seat'. With the passing of the time the island came to be known as Pirotan. According to Shri Sanat Chavan, a Conservator of Forest, who had

been long associated with this area, farmers used to cut the Mangrove trees for getting fuel while Vaghers for providing fodder to their cattles.

When the Gujarat Government was convinced about the presence of rich flora and fauna besides wide varieties of Corals in this areas, it decided to provide adequate protection to the fast vanishing species of marine life. What it immediately needed was protection rather then development. As a result of detailed exercise, the Government notified an area of 162.80 square kilometres as Marine National Park and 455.92 square kilometers as Marine sanctuary. The Government first cancelled the five leases given to the private cement plants for digging up lime-stones which included even Corals in this area.

Secondly, intensive efforts are being made to plant large number of mangrove trees all along the coast surrounding the Marine National Park islands. At present, authorities are not in favour of allowing too many visitors to the Park. Only groups of students and members on Nature Lover's Society of different parts of the country are allowed entry in the Park that too in the Pirotan islands. Besides giving them first-hand information about the flora and fauna in the area by taking them inside the sea during the ebb-period, they are also encouraged to camp for a few days and join in voluntary plantation of mangrove saplings So far, over one lakh saplings have been planted.

Pirotan island, located at a distance of 18 Kms from Jamnagar, can be reached by a small launch when tide conditions are favourable.

Coral reefs

There cannot be any greater diversity of colours and shape in life than on the Coral reefs, reef itself being the work of living things. Coral reefs are the constant and continuous process of building up by some organisms. Coral reefs not only harbour their animals but also give shelter to micro-plants. The existence is mutually beneficial to both. In fact, mangrove swamps with Coral reef provide excellent sanctuary for the plant and animal life as it provides good food, shelter and facility for breeding ground. It is surprising that the Coral constitutes only about 10 per cent of the living matter on the reef. Rest of the 90 per cent consists of marine life, sponges, anemones, shrimps, lobsters, carbs, octopus, starfish and other extraordinary diverse marine life. Octopus is the prominent occupant of the dead and live Coral reef requiring special mention as the first citizen of the under-sea Coral world.

The best days for visiting Pirotan is the 8th, 9th, 10th and 11th days of Shud and Vada fortnights of every month of Vikram era. The Park can be visited throughout the year except the monsoon.

One has to trudge 8 kilometres in the sea after the water receded after an ebb. No sooner a few metres were covered, a new and colourful world of marine life opens before you. The sea bed is muddy and one has to walk through a small stream of the water right up to the Lagoon, keeping his eyes open for the colourful fish and other creatures. About 70 species of sponges (soft and calcorious types) have been recorded in the Gulf of Kutch. They occur in fantastic array of colours, i.e. pink, red, blue, light blue, brown, yelow and orange.

Octopus as the first citizen of the under-sea Coral world, move with considerable swiftness by jetting water from an adjustable siphon, cloud water around them with their ink to form smoke-screen and change colour to suit the surrounding and escape within no time.

Fish

About 150 to 200 species of fish of different colours, shapes and sizes, including about 18 types of sharks, coral reefs inhabit this area. Occasionally, even butterfly fish, baby tiger sharks and dolphins are also found. The other important marine creatures are reptiles and turtles. It is significant that large number of Green sea turtles guided by stars and currents in a manner still unknown to man, migrate from far away ocean breeding grounds and come to these coral islands.

Protection measures yield results

According to Shri J.R. Parmar, who is in charge of the Marine National Park, even though no major developmental work could be undertaken due to lack of resources, the authorities have succeeded in preventing further destruction of Corals and also the mangrove trees.

However, it is proposed to construct a jetty on the Pirotan island at a cost of Rs. 1 lakh as well as setting up of a marine life museum in Jamnagar. India has to discharge 'international' commitment to take care of the eggs being left by hibernating turtles passing through the Marine National Park. Turtle breeding centres are being set up in Mangrol, Salaya, Pirambet and Mandvi. The eggs are hatched in these centres and turtle cubs are released in the high seas for onward journey !

Looking to the importance of the Park from the ecological balance and environmental protection points of view, international organisations like the World Bank etc. are expected to come forward to help in financing protection schemes and small-scale development plants as this is a rich heritage we have held in trust for the generation to come.

Excessive grazing, threat to environment

(A study of Himachal Pradesh)

R. P. Kapoor

Forests of Himachal Pradesh suffer because of excessive grazing by sheep, goats and cattle, thus posing a threat to. the eco-system. There has been a very little scientific approach and developmental effort for improving the grazing facilities in the region. The author here feels that the Himalayan livestock has to depend on tree fodder for environmentally sound rural economy as there are a few pastures in the region. So he suggests making an assessment of the total carrying capacity of the grazing lands and of a scientifically viable population in the region that can be supported without causing any ecological disturbance.

GRAZING HAS ALWAYS BEEN called a problem. It is only excessive or careless grazing that is a problem. Intense grazing hampers regeneration as it causes injury to plants either because of frequency or degree of removal of its photosynthetic organs or destroying the woody portion by trampling. Less direct but even more important consequences of intense grazing is it impairs the capacity of plants to grow and reproduce. Moreover, the plant cover is so thinned that the soil is no longer protected from erosive influences of wind and water. Uncontrolled and unregulated grazing causes loss of productivity, site quality and species collapse consequently leading to ecological degradation.

Excessive grazing

The forests of Himachal Pradesh are subject to excessive grazing pressure both by the migratory sheep, goats and buffaloes as well as by the local cattle. Grazing is permitted in the forests both to local and nomadic graziers who are right holders and concessionists. Local right holders have the right to graze any number of cattle in the forests adjoining their land holdings; whereas nomadic graziers are allowed to graze a fixed number of animals in areas where they have rights. As a concession, grazing is also allowed to nomadic graziers of the adjoining States, in respect of sheep and buffaloes. The right holders and concessionists are also permitted to lop trees in different lopping regions both for fodder and beding material for the cattle. Grazing by the local cattle, grazing and browsing by sheep, goats and buffaloes of the nomadic tribes of the State is considered to be a threat to the forests and eco-system

There are specific routes prescribed for the movement of the professional graziers to the summer pastures in the Himalayas and for winter grazing in the Siwalik and adjoining areas. There are certain rules in force regarding movement of the flocks and their halting, etc. The flocks are precluded from grazing from demarcated forests and grazing is permitted in second class demarcated and undemarcated forests through which they pass during certain specified period. On their way to rich alpine pastures of the Himalayas, flock after flock travels the same route, where the areas have already been grazed by the first arrivals and also by the local domestic village animals.

Measures to control it

Different regulatory measures such as rate of taxation, prohibiting grazing in certain areas etc. have

been in force to control the incidence and intensity of grazing. The entire management practices, as far as grazing is concerned, have been confined to collection of grazing fee and issue of permits. Although, grazing has always been described as a threat and menace to the regeneration of forests, yet there have been very little scientific inputs and developmental efforts for improving the grazing facilities.

The concept of carrying capacity has been the guiding factor for the scientific management of the pastures and grazing lands all over the world. "The carrying capacity of the grazing lands is determined by annual production of plant growth in excess of what is required by the plants for their metabolism, health and vigour." Neither the carrying capacity of the alpine meadows for summer grazing and traditional grazing areas for winter grazing as well as pastures along the migratory routes of nomadic graziers has been studied or assessed, nor any systematic efforts made for scientific management so as to allow optimum level of cattle population to graze.

Nothing to support regeneration

Silvicultural techniques and forest management practices have been oriented towards maximising production of timber. Even in the plantation practices, greater reliance has been on planting of non-browsable species to ensure success. Although the concept of rotational grazing and the lopping rules have been in vogue in the State for a considerable time the grazing areas have been left to the nature to regenerate itself. There has been very little manmade inputs to supplement or accelerate the natural processes of regeneration of grasses, herbs, forbs or trees.

There has been a tendency to rehabilitate all degraded lands, permanent pastures and traditional grazing areas by planting them with non-browsable timber species. Even the permanent grasslands particularly those situated in the Southern Aspect, have been planted up with such species as chirpine as this is the only species which can thrive in these grasslands. This tendency has been there because we wanted to play safe with our manmade plantations. Moreover, forest management systems were developed on the principles of converting uneven aged, so called low value, mixed miscellaneous forests into even aged high value uniform forests. As a result monocultural practices received precedence over polyculture.

Grazing pressure

Himachal Pradesh is a hilly state situated in the Himalayan region which is ecologically very fragile and sensitive. Out of about 5 57 million hectares geographical area, over 2.11 million hectares, constituting nearly 38 per cent, is classified as forests. About 1.21 million hectares nearly 22 per cent of the geographical area is estimated to be under permanent pastures, other grazing lands, miscellaneous tree crops and grasses etc. The total livestock is over 4 77 million, 2.10 million being cattle, 2.08 million sheep and goats and the rest others (All India Livestock census-1977). The above data indicates the degree of grazing pressure. Study conducted by Agro-Economic Research Centre (for the Western Himalayan Region) H. P. University, Shimla during 1984 regarding Management of Social Forestry in Himachal Pradesh reveals that during the period 1966—70 and 1977—81, compound growth rate in humand and cattle population has been 2.05 and 0.39 respectively resulting in deterioration of man-kind and cattle land ratio. It has also been revealed by the above study that area closed for grazing has increased and area open for grazing whole year has decreased thereby further reducing the grazing facilities.

Grazing area shrinking

There has been increasing trend of bringing more land under aricultural crops and manmade plantations under production forestry and social forestry. Thus more and more areas are being closed for grazing. Besides there has been widespread menace of weeds like lantana, xanthium, etc. particularly in the Siwalik hills which have been traditional grazing areas of nomadic graziers for winter grazing. All these factors have resulted in reduction of grazing facilities in the State leading to destabilization of ecological balance established over centuries between man and his use of land.

Dependence on fodder trees

As already described, grazing and trampling increase run off and erosion of top soil; and grazing is also responsible to fires often used by villagers to encourage sprouting of succulent green grasses. With the exception of the pastures above tree line, forest, and not grassland, is the natural vegetative cover of the Himalayas. Therefore, Himalayan livestock must depend on tree fodder for environmentally sound rural economy. In Nepal, more than 35 per cent of the estimated total feed is supplied by fodder trees. More than 75 per cent of the fodder is used from November to June. During this period fodder trees are the only source of green forage. Moreover, the milk yield can increase considerably with the use of tree fodder as the leaf tree fodder has higher protein centent than the grass and is green during dry period. In addition the yield from the fodder can be increased by following appropriate lopping and pollarding techniques.

Herbs and shrubs

There are a large number of shrubs, herbs and forbs in the Himalayan region (including Siwalik) which provide enough fodder to the cattle, sheep and goats but this type of fodder availability has not been assessed. In fact no attempt has been made to evaluate the quantity of such fodder. This area has remained unexplored so far. This vast potential needs to be scientifically studied and properly utilised as an important source of fodder for seasonal grazing. Some

(Contd. on page 19)

Acid rain : its effects on fish and wildlife

C. V. Mohan

ACID RAIN usually refers to any precipitation having an acidity higher than that of normal rain water. Normal rain water is weakly acidic because atmospheric carbondioxide combines with rain-water to form weak carbonic acid. Acid rain, on the other hand, is the result of a series of complex reactions in which sulfur and nitrogen oxides combine with rain water to form sulfuric and nitric acids, which are much stronger acids than naturally occurring carbonic acid.

Substantial amounts of sulfur and nitrogen oxides are released to the atmosphere by several natural processes and industrial activities. Natural phenomena such as volcanoes, forest fires, lighting and the decomposition of organic matter release large quantities of these oxides into the atmosphere Human related activities such as fossilfuel burning and transportation release large amounts of these oxides. This is more so in heavily industrialized and urbanized areas, where emissions of sulfur and nitrogen oxides into the atmosphere is estimated of being more than 10 times greater from human activities than from natural sources. In the U S. alone about 2|3 of the land area receives acid precipitation. Scientists believe that wind currents and storm tracks transport air borne pollutants from the area of origin to elsewhere. This fact has led to several international controversies also.

Most, if not all areas are susceptible to acid rain. The buffering capacity of water or soil determines its susceptibility. In general, the lower the buffering capacity of a soil or water, the greater its sensitivity to acid rain. Surface waters with low calcium carbonate levels (10 mg. or less) are considered potentially sensitive to acid rain.

The acidification of any freshwater system is a slow and gradual process, which remains subtle and undetected until damage has occurred. However, in the ecosystem several noticeable changes occur, and they may serve as indicators. The production of zooplankton (tiny aquatic animals) and other fish food items may show a decline. Fish species also differ considerably in their tolerance to higher acidity Decline in larval fish number may be an early evidence of acidification, because early life stages are more sensitive to higher acidity than older fish of the same species Identification of lakes and streams undergoing early stages of acidification is also chemically possible Excess sulphate concentrations, reduced alkalinity and increased aluminum concentrations can provide signals before marked pH decreases occur

Effects on fish

Acid rain has several effects on fish and fishery resources. Fishes after spawning or overwintering are particulaly more sensitive to higher acidity Fishes well established in lakes and streams that have acceptable alkalinity-acidity levels may be subjected to severe stress following heavy summer rains or spring snowmelt, with its accumulated acidity. In temperate waters fishes trapped in surface layers of frozen streams or small lakes are particularly susceptible during the first major thaw.

Fish kills are a common feature in highly acidified waters. The process of acidification may force the fishes to move out of the area. At sublethal levels fishes may fail to reproduce as they suffer stress. The population may become gradually extinct because of negligible recruitment of young fish to replace older ones as they die. Continuous chronic exposure to acidified waters can also result in reduced growth rates, impairment to body organs, and a decrease in resistance to environmental stress and diseases. Fish populations may decline because of

mortality brought about indirectly. Fishes in acidified waters may die of accumulation of heavy metals. Shortage of the preferred food items of the fish may also play a role in the decline of fish population. Eventually, the physiological stress caused by acid conditions leads to gradual extinction of the fish species.

...and wild life

Acid rain affects wildlife, but not as apparently as fishes. Nevertheless, many direct and indirect effects of acid rain on productivity and survival of wildlife populations have been documented. Acid rain can directly affect eggs and tadpoles of frogs and salmanders that breed in small forest ponds. It is even postulated that acid rain can indirectly affect animals at the top of the food chain because of bioaccumulation and biomagnification of metals through food chain. Wildlife is also affected indirectly by the loss and alternation of food and habitat resources. Considerable damage to plant communities is also reported. As plants and wildlife are directly related any effect on the former will be disadvantageous to the latter.

Major effects of acid rain cannot be abated without managing the source of pollution. However, some measures may be taken locally to counter acidification of streams, lakes and ponds Addition of calcium carbonate or calcium oxide to acidified waters (liming) is one of the common practices for reducing the acidity of these waters. As a management measure acidified waters may be stocked with hatchery-raised hardy fish species. This replenishes the stock that would otherwise decline.

Control of fossil-fuel emissions, enforcement of emission standards and augmenting laboratory research and field monitoring are needed to solve the acid rain problem. Acid rain and its effects will not go away overnight Increasing public awareness of the problem is the first step toward finding some solution. □

(Courtesy : Science Reporter)

(Contd. from page 17)

of the shrubs and trees such as Murraya exotica, Carissa, Spinosa, Pyrus pashia, Indigofera, Grewia, Morus alba, Oaks, Conton easter bacillaris, Berberis lycium, Salix spp., to quote a few; withstand repeated hacking and periodic pollarding. All these species provide good leaf fodder. These species could be intimately mixed in the plantations and allowed to be hacked after a period of 4 to 5 years to encourage large number of fresh shoots for fodder production Only care has to be taken that the root stock is not damaged permanently. All the degraded grazing lands and pastures could be developed by planting the above species at a fairly wider spacing and pollarded shoots harvested or even allowed to be grazed by the cattle sheep and goats. Interspaces could be planted up with good quality grasses or fodder legumes. Under such a silvi-pastoral production system the carrying capacity of our grazing grounds could be enhanced to a considerable extent.

Regulatory measures according to carrying capacity, improving production of fodder, pelletization of nutritive grasses, establishment of fodder banks and stall feeding etc. are the various recommendations made regarding control of grazing in forest areas. The biggest question is whether these recommendations could be implemented ? There is no simple solution to a complex problem of grazing. The stall feeding could be practised only in the case of improved varieties of animals particularly cows and buffaloes. It may not be possible to enforce stall feeding in the case of sheep and goats. Neither this sort of measure is advisable nor necessary in the Himalayan region. Even the World Conservation Strategy has also advocated in favour of nomadic grazing in the Himalayan region. In fact system of nomadic grazing is ecologically sound provided the cattle population is maintained at an optimum level. Under this system grazing areas get seasonal rest which ensures the maintenance of productivity of these areas. This system becomes harmful only when the areas get depleted by unabated and uncontrolled grazing in excess of its carrying capacity.

In order to regulate grazing in Himachal Pradesh it would be very necessary to assess the total carrying capacity of the grazing lands and make an estimate of a scientifically viable population which can be supported without causing ecological disturbance. □

NSIC records more profit

The National Small Industries Corporation Limited (N.S.I.C), a Public Sector Undertaking, achieved a record sales turnover of Rs. 37.14 crore during 1985-86. This represents an increase of 38 per cent over the sales turnover during 1984-85. The Corporation also enhanced its profitability to Rs. 1.10 crore as against Rs. 84 lakhs in 1984-85. This is the fourth successive year in which the Corporation has made profit.

With a view to reaching small entrepreneurs at their door-steps in the rural and backward areas of the country, the Corporation conducted 44 motivational campaigns during the year. The Corporation continued to share its experiences and expertise in the development of small scale industries in other developing countrs, particularly Africa, during the year. The Corporation is setting up a Small Industries Service Centre in Mauritius and similar proposals for Vietnam and Ethiopia are under finalisation □

Producing paper from bagasse

Dr. A. Ghosal
and
L.P. Rai

Many countries have taken to producing newsprint from bagasse. India, being one of the largest producers of sugarcane, has vast potential to utilise bagasse for producing paper. This will help save not only a lot of foreign exchange from import of newsprint but will also relieve pressure on our forests which are being continuously exploited to provide wood for producing paper. Thus, producing paper from bagasse helps protect environment as well as makes better use of the resource which at present is being used as fuel. The author strongly pleads for establishment of an integrated complex consisting of paper mill, sugar mill and distillery so that these interdependent sugarcane-based industries can function more economically and efficiently.

AGRICULTURE OCCUPIES a predominent position in the development of Indian economy. Agriculture contributes nearly two-fifth of the GNP and provides livelihood to about 70 per cent of the total population. Since agriculture is the mainstay of the economy, it influences the performance of other sectors. As a matter of fact there is complementarity between the growth of agriculture and the development of industry. A rise in the agricultural output by 10 per cent increases the output of all industries by over 7 per cent.

At present sugarcane production is not remunerative. There are several reasons behind it :

(i) Unremunerative sugar prices and cyclical swings in production ;

(ii) Irregularity in availability of cane ;

(iii) Inefficient way of getting juice out of sugar cane ;

(iv) Loss of a very large percentage of sugar ;

(v) Small size of holding and low cane yields

(vi) Lack of modernisation ;

(vii) Unavailability of efficient filters ;

(viii) Sugar obtained by traditional methods is not good.

Sugarcane is the main source of sugar. The other by-products of the sugarcane are paper, chemicals medicinal alcohol, power alcohol, fertilisers, animal feeds, proteins, flavour for food products, and even glass from its ash. Small scale methods of producing sugar exist worldwide and sugar is produced with varying degree of efficiency in almost every country. It is also a very useful source of many chemicals and the bagasse is a very useful fuel and a source of building material. From sucrose, a by-product of sugarcane industry, one gets polymers, drugs and plastics. Molasses can be used for cattle feed, for making silage or making organic chemicals or for fermenting and then distilling alcohol. By fermenting molasses one gets rum. Bagasse, which is at present being utilised as fuel, may be used to make paper and wall board. Thus, we see that sugarcane is a very important source of many materials.

Sugarcane contains about 14 per cent sucrose and about 85 per cent of the cane is liquid. The first problem which needs to be tackled is the inefficient way of getting the juice out of sugarcane. Wax is yet another important by-product obtained from sugarcane. If one extracts this wax, after removing the sugar, by treating with benezne in a solvent extraction plant, it can be a very useful way for water proofing or polishing. The agricultural wastes, viz., bagasse, rice straw and wheat chaff may be used to produce paper in general and newsprint in particular.

Bagasse for newsprint

At present India is importing more than 2 lakh tonnes of newsprint p.a. and spending about Rs. 108 crore in foreign currency for it. Many counrties like Argentina and Mexico have been producing newsprint from bagasse using Cusi process. In India also Tamilnadu Newsprint Limited at Pugalur (Trichy) has started the production of newsprint from bagasse using modified Cusi process. This plant is based on bagasse available from five sugar mills which are scattered far away—some of them are even more than 100 km away.

To start a newsprint mill based on bagasse we need other inputs as well. A feasibility study to assess the demands of other inputs needs to be done. This study tries to answer basic questions :

(i) Is it technically feasible ?

(ii) Is it economically feasible ?

(iii) Is it socially and politically acceptable ?

So far as technical feasibility is concerned we have already discussed that the process is available to produce newsprint from bagasse Economically also it is feasible because we have plenty of bagasse available in the country. It is also possible to replace bagasse by coal as fuel. One tonne coal can replace about 4 tonnes of mill run bagasse as fuel, indiacting that costwise also coal is preferable. The only important point here is to ensure a steady supply of coal.

As regards the third question, importance of paper and newsprint in social life does not need elaboration. As a matter of fact paper consumption per head is a measure of civilization. A newsprint mill will certainly help India in its march to economic independence and self-reliance.

Using bagasse as the main raw material for production of newsprint in India has been examined here on a priority basis. The newsprint production in India at present depends mainly on hardwood from the forest as raw material. Uncertainty of supply of raw materials inherent for such a situation is acting as a constraint on the growth of the industry. Reliance on hardwood involves deforestation which has adverse effects on ecology. At the same time, demand for newsprint is going up and is likely to touch the mark of 25 lakh tonnes by 1990. Substitution of hardwood by bagasse will open new vistas for expansion of paper industry. The supply of bagasse is not only assured but is expected to increase also with passage of time. At present, the sugar mills are burning bagasse to produce energy for their own use.

Easily available

Agricultural rsidues, particularly bagasse, are one of the potential raw materials in paper industry in our country. The approximate quantity of bagasse produced by the sugar factories in the country during the sugar season 1982-83 was 264.54 lakh tonnes (wet basis) which is sufficient to produce about 40 lakh tonnes of paper.

Burn coal not bagasse

At present sugar mills are burning bagasse in the sugar mill boilers to produce their own steam and power. If sugar mill boilers run efficiently at present it is possible to save 5 per cent bagasse as surplus even after utilising bagasse as fuel by them. With modern boilers bagasse may be saved to the extent of even 25 to 30 per cent. In case these boilers are converted into coal fired boilers from bagasse fired boilers in a phased manner, the future sugar mill boilers have to be designed accordingly. The existing sugar mills also have to have their boilers converted for other fuels like coal.

To work out the economies of substituting bagasse by coal as fuel we are giving here the fuel value of bagasse in terms of other fuel materials. One tonne of mill run bagasse with 50 per cent moisture is equivalent to 0.18 tonne fuel oil, 0.28 tonne bituminous coal, 0.15 tonne natural gas and 0.55 tonne dry wood. This can generate 2.25 tonnes of steam.

At present, cost of one tonne of bagasse (wet) is around Rs. 200—250, whereas the cost of coal is ranging between Rs. 700—750 per tonne. Thus cost per unit energy is less for coal than for bagasse. It will therefore be economical to sell bagasse and buy coal as alternative fuel. From the above statistics it is clear that one tonne of ordinary coal can replace about 4 tonnes of mill run bagasse. This shows that even costwise substitution of bagasse by coal is more economic. The only hitch here in substituting bagasse by coal is the timely supply of coal to the sugar mills as well as to the paper plant itself. With a proper commitment and arrangement it is quite possible to divert bagasse from sugar mills to paper mills economically.

Finally, though there is no marketable surplus of bagasse because of its being used as fuel either in boilers of the mills or by people for domestic consumption, there is scope for recovering 30 per cent of the bagasse output at present and more when

people are adapted to the use of more efficient fuel sources.

International scene

Many developing countries in the world have started production of newsprint from bagasse and are becoming self-sufficient in the production of newsprint. Scarcity of soft wood which is traditional raw material for newsprint production has forced technologists and scientists to search for other raw materials which are locally available and could meet the requirement of paper industry. With the development of Cusi process many countries like Peru, Mexico and Argentina have started production of newsprint from should be above 50 gm v2 in order t oassure adecribe briefly the achievements of a few newsprint projects in the world based on bagasse.

(i) World's first newsprint mill based on bagasse was started in 1978 in Peru. This plant is located in the Peruvian sugar belt about 500 km. north of Lima at Trupal. This mill has a capacity of 1,10,000 tonnes|annum and was built for about US $ 120 million. In their economic feasibility study they had arrived at the conclusion, at the time of commissioning the project. that the national economy would benefit if newsprint would be made with available bagasse. It was also reasoned that high technology newsprint mill would not only make the country self-sufficient but also would provide a product of export

With their trial experiments they arrived at the conclusions that the best weight of the newsprint should be above 50 gm|M² in order to assure adequate capacity. The paper mill has installed oil and pith fired boilers at sugar mills where moist depithing is done and pith is sent to boilers for burning. 80 per cent of pith is removed here. In 1982 with the modifications in process for making newsprint grade from bagasse, it was announced that the newsprint now coming from the mill is of the same quality as that made from regular wood pulp but costs considerably less. This was the first time that bagasse was commercially acceptable in place of wood pulp for fine-grade newsprint with required tear strength and opacity Nowadays reports available indicate that the above Sociedad Paramonga Plant is now producing newsprint cheaper than wood pulp newsprint.

(ii) The second commercial Newsprint Project with bagasse as raw material was started in Mexico. It has been using a modified version of the Cusi process.

(iii) The third Newsprint Mill from bagasse, viz, Papel Del Tucuman, was started in Argentina.

Cuba has come forward to join the other countries in producing newsprint from bagasse. The pilot plant referred to as 'Cuba 9' has been constructed at Quivivan (about 35 miles from Havana). It is capable of producing upto 35 tonnes mechanical pulp and approximately 35 tonnes of newsprint daily.

This plant is the finest in the world for R & D work in the bagasse field. Although it was designed primarily for developing optimum formulations for production of bagasse dissolving pulp, it is extremely flexible, and work can be done on an entire range of bagasse based pulp, paper and paper-board products.

In India

Use of agro-resources like bagasse, wheat chaff, rice straw, etc. to produce writing and printing paper in India is at present riding the crest. In the early eighty's feasibility reports for utilisation of bagasse to produce newsprint were prepared and were paid much attention. The technology needed is available in India and at the same time being used in some other countries. Here a brief summary has been prepared regarding the state of the art in India.

The first paper mill to use bagasse to produce newsprint in India was started early this year at Puglur in Trichy district. The plant is known as Tamil Nadu Newsprint and Papers Limited. This is Rs. 200 crore project started with the help of World Bank which itself provides 100 million US dollars for this project through Industrial Development Bank of India. It is expected that the mill will produce 50,000 tonnes of newsprint and 40,000 tonnes of printing and writing paper per annum. The main raw material of the mill will be bagasse to the extent of 75-80 per cent. Other raw materials will consist of hardwood, mainly of eucalyptus.

Scope of setting up yet another bagasse-based paper plant in the Gorakhpur-Deoria region of U P. has been examined. This region is rich in sugarcane production, has alluvial soil and has plently of water resources, yet it is one of the poorest areas in India Through an appraisal of natural resources in the region it appears that if a paper unit were set up at Captaingunj or vicinity in the hub of sugar-growing region, near the sugar mills, the main raw materials, viz., bagasse and hardwood could be fed to the unit from adjacent places. The area being well-connected through rail, coal could be brought from Ranigunj or Jharia fields and power could be available from Rihand project. At present sugar mills comprise the only industrial activity of the region—a paper unit could, therefore, work as a catalytic agent in boosting industrial activity and enhancing the income of the people.

The integrated approach

It appears that an integrated complex; which contains the paper mill, sugar mill and distillery will be fairly successful. This type of management will not only make raw materials available to the other one and help in waste utilisation and disposal but substantial saving can thus be obtained on administrative overheads, laboratories, workshops, steam and

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Health for all by 2000 AD, a dream!

Dr. C. Harichandran

The author here describes the health care infrastructure and services in India as very poor with a wide regional disparity because of inadequate availability of doctors, nurses, beds, hospitals, trained health manpower per lakh population. He feels the attainment of the objective of health for all by 2000 A.D. will remain a dream only unless the health care package including development of nutrition, safe drinking water supply, sanitation, housing, eduction and social welfare are given due importance and prioirty in our plan frame.

IN THE HEALTH DEVELOPMENT policy of the country, the recommendations of the Bhore Committee 1946 and the Health Survey and Planning Committee, popularly called the Mudaliar Committee, of 1961 served as the blueprint for action. They envisioned a model of wide spread health care which would reach every village, and especially most of the deprived sections of our people. But development of health care in a holistic or multisectoral approach was recognised only later. Thus there is a shift in approach and health is defined as a package of services which include primary health care, sanitation, nutrition, protected water supply and housing. The Director General of WHO, H. Mahler pointed out that the essential elements to attainment of health for all include adequate food and housing, protected water, services for the provision of ante-natal, natal and post-natal care including family planning, infant and child care including nutritional support, immunisation against the major infectious diseases of childhood, prevention and control of locally endemic diseases, an easy access to useful information on prevailing health problems and methods of preventing and controlling them.

Poor medical facilities

The health problems of this nation are briefly highlighted with the following facts (i) India is the only country in the world in which the poor pay for the health of the rich; (ii) the health care has become very costly; (iii) the system of health care developed and practiced in India is inaccessible to a vast majority; (iv) the development of health and hospital services are urban oriented; (v) wide imbalances in the supply of various components of medical services; (vi) glaring disparities in infrastructure and services; and (vii) lack of integration and co-ordination of other health essentials.

The Seventh Plan observes that health programmes suffered considerably due to poor inter-sectoral co-ordination and co-operation and serious efforts of effective co-ordination and coupling of health and health related services and activities like nutrition, safe drinking water supply, sanitation, housing, education, information and commuication and nutrition will be made as a part of the package of achieving the goal of health for all by 2000 A.D. India is a signatory to Alma Ata declaration and is committed to achieving health for all by 2000 A.D

Investment on health

The investment on health is, in fact, investment on human capital. The development of human resources only helps increase efficiency and productivity. This was recognised right from the planning era and was reflected in the investment made in the development of health and related services. The total

plan investment on health for the period from 1951 to 1985 amounted to Rs. 3765.05 crore. The Plan investment on health though has increased from Rs. 65.20 crore in the First Plan to Rs. 1821.10 crore in the Sixth Plan, the percentage of investment on health to total has decreased as shown in Table 1. *In this context it should be noted that health and education are the major consumers of the non-plan budgets of the states.*

Table 1

Pattern on Investment of Health from 1951—1985

(Rs. Crore)

Plan Period	Total Plan Investment Outlay	Plan on Health	Investment in Health as Percentage of Total
First Plan (1951-56)	1960 00	65.20	3.30
Second Plan (1956-61)	4672 00	140 80	3 00
Third Plan (1961-66)	8576.00	225 90	2 60
Annual Plans (1966-69)	6625 40	140.20	2 10
Fourth Plan (1969-74)	15778.00	335.50	2 10
Fifth Plan (1974-79)	39322 00	760 00	1 40
Annual Plan (1979-80)	12601.00	275.45	2.19
Sixth Plan (1980-85)	97500 00	1821.10	1.80

The Seventh Plan envisages an investment of Rs. 3292.89 crore during the period 1985-90. Of this, the states and union territories together have to put an investment of 2495.55 crore. Under Centrally Sponsored schemes, the investment will be Rs. 557.75 crore and under sectors scheme Rs. 330.59 crore. Over and above the investment on health care, an amount of Rs. 3256.26 crore is allocated for family welfare. The Statewise allocation on health care outlay can be seen in Table 2. Of the State Sector Outlay 43 per cent is earmarked for MNP Programmes.

Table 2

Seventh Plan Outlays—Health Sector Distribution by States/UTs

(Rs Crore)

Sl No.	State	Total	MNP	Programmes other than MNP
1	2	3	4	5
1.	Andhra Pradesh	164.20	67 39	96 81
2.	Assam	75 00	28.48	46.52
3.	Bihar	146.40	60.00	86 40
4.	Gujarat	103.14	40.00	63.14
5.	Haryana	78 77	35 46	43.31
6.	Himachal Pradesh	26 25	10 03	16 22
7.	Jammu & Kashmir	63 06	24 07	38 99
8.	Karnataka	118 00	50.00	68 00
9	Kerala	52 00	24.00	28 00
10.	Madhya Pradesh	157 33	75 00	82.33
11.	Maharashtra	374 00	195.17	178.83
12.	Manipur	13 00	6.00	7.00
13.	Meghalaya	16 00	7 00	9 00
14	Nagaland	15 00	4 50	10.50
15.	Orissa	54 50	17 03	37 50
16.	Punjab	103.50	40.00	63.50
17.	Rajasthan	82.57	34.00	48.37
18.	Sikkim	5.81	2.00	3.81
19.	Tamil Nadu	150.00	50.00	100.00
20.	Tripura	13.00	5.00	8.00
21	Uttar Pradesh	300.00	200.00	100.80
22.	West Bengal	128 00	68.00	60.00
	Total—States	2240.33	1043.10	1197.23
23.	Union Territories	255.22	20.25	234 97
	Grand Total : States and UTs.	2495.55	1063.35	1432.20

An overview of health

Over the years of development effort, India's achievement in the health front is significant, particularly in the attainment of the basic health indicators, namely reduction in death rate, birth rate, infant mortality rate (IMR) and increase in life expectancy, training and production of manpower and so on. The various programmes initiated and implemented have helped in bringing commendable progress in the field of checking communicable diseases like smallpox, plague, cholera, malaria, etc. An analysis of the facts would indicate that the expectation life at birth has increased from 41.3 in 1951-1960 to 52.1 in 1976-1981. Even at this increased level, the present longevity is still around 20 years below the highest level achieved in many of the advanced countries. The highest longevity in India is attained in Kerala which is 60.2 as against 39.3 in UP., the lowest in this regard. There is considerable variation among different states as highlighted in Table 3.

In India infant mortality rate (IMR) during the period 1911-1915 was 204 which gradually declined to 114 in 1982 This is no mean achievement in a country of India's size and of other socio-economic problems of a complex nature including malnutrition, lack of availability of protected water, poverty and so on. The rate of infant mortality is one of the major indicators of human welfare and quality of life. The IMR in Kerala is 36 which is the lowest among Indian states. But countries like Japan, Sweden, Netherlands, Denmark, etc. have *successfully brought down the* IMR to below 8. Among poor countries Sri Lanka and China turned out to be much better in this area. The situation would indicate that concerted efforts are necessary to reduce the IMR between India and other countries and between different states. Among Indian states, Kerala has the record of achieving a reduction in death rate almost comparable to that of developed countries. For the attainment of the above indicators in the level where Kerala stands today, massive investment effort in terms of physical

Table 3
Basic Health Development Indicators in Different States

Name of State	Doctor-population (per lakh pop.)	Nurses-population ratio (per lakh)	Bed-population (per lakh population)	Birth rate (per thousand persons) 1981	Death rate person
1	2	3	4	5	6
1. Kerala	46	37	169	25.6	6.6
2. Maharashtra	65	54	122	28.5	9.6
3. Gujarat	43	11	94	34.5	12 0
4. West Bengal	60	16	90	33.2	11.0
5. Punjab	128	35	85	30.3	9 4
6. Tamil Nadu	66	52	84	28 0	11.8
7. Karnataka	54	14	80	28.3	
8. Andhra Pradesh	43	20	63	31.7	11.1
9. Haryana	.	14	57	36 5	11.3
10. Rajasthan	25	15	53	37.1	14.3
11. Assam	36	13	48	33.0	12.6
12. Orissa	31	11	44	33 1	13.1
13. Uttar Pradesh	22	7	42	39 6	16 3
14. Bihar	26	11	32	39 1	13.9
15. Madhya Pradesh	8	16	32	37 6	16.6
16. Sikkim		.	159	31 0	8 9
17. Nagaland		..	135	21.4	5 3
18. Meghalaya		..	121	32.6	8 2
19. Manipur	.		90	26 6	6.6
20. Jammu & Kashmir	45	.	66	31 6	9 0
21. Himachal Pradesh	..	4	65	31 5	11.1
22. Tripura			59	26 40	8.0
All India	39		71	33 9	12 5

and financial resources are needed in other states. The health development indicators in different states are given in Table-3.

Health infrastructure

During the planned development era, there was considerable expansion in health infrastructure. There were 47517 sub-centres, 7399 Primary Health Centres and 249 subsidiary centres in position in 1979-80. Due to a major shift in the health policy of the country in favour of rural health in the 1980s, there was tremendous expansion in the rural health infrastructure and today there are 83,000 Sub-Centres, 11,000 primary health centres and 650 community health centres. This would work out to 16.5 Sub Centres and 2.2 Primary Health Centres in every block in the country. In 1950, there were 2717 hospitals and 6891 dispensaries which increased to 6805 and 16754 respectively in 1981. Though at the macro level there was tremendous expansion of hospitals this has not truly reflected in the development scenario of different states. An analysis of the data for the period 1971 to 1982 would clearly bring out the fact that except in states like Kerala, Maharashtra, Gujarat, West Bengal, Punjab and Tamil Nadu not much headway was made in this direction The number of hospitals per thousand sq km. of area with regard to Kerala increased from 3.02 to 19.5 during the period 1971 and 1982, 1.33 to 3.3 in the case of Maharashtra and 0.7 to 4.2 in the case of West Bengal. In other states the increase was only marginal. In Tamil Nadu it went up from 2.5 to 2.9, Assam 1 0 to 1.4, Karnataka 1.0 to 1.2 and so on. This situation brings out the glaring disparities in hospital services.

Manpower and health care

The trained manpower is one of the indicators of health development. In the International scene USSR has impressive availability of one physician for every 280 persons, Czechoslovakia one for 40 persons, West Germany one for 450 persons and so on. Among the low per capita income countries India stands in a better place but the availability is less than in Pakistan, China and Egypt. There is phenomenal increase in the case of allopathy medical practitioners. The number of registered medical practitioners increased from 59,338 in 1950 to 1,97,650 in 1975 and 2,68,712 in 1981. The number of practitioners per lakh of population in-

creased from 16.5 in 1950 to 393 in 1981. All the system of medicines namely, allopathy, Indian systems of medicine and homoeopathy taken together had a total of 6.51 lakh medical practitioners in 1981. Of this allopathy accounted for 41.3 per cent (2.69 lakhs), Indian systems of medicine 41.9 per cent (2.73 lakhs) and homoeopathy 16.2 per cent (1.09 lakhs). In 1981, India had a total number of 3.78 lakh registed nurses, mid wives and health visitors. Of this, nurses accounted for 39.8 per cent (1.5 lakh), midwives 38.3 per cent (1.45 lakh), ANMS 19.4 per cent (0.73 lakh) and health visitors 2.5 per cent (0.10 lakh).

An analysis of the data relating to different States would indicate that there is wide disparity in the availability of health manpower. Punjab tops the list with 128 doctors per lakh of population and Tamil Nadu stands second. Madhya Pradesh has the lowest availability of doctors namely 8 per lakh of population. Though all India average of doctors per lakh of population was 39 in 1981, Rajasthan, Assam, Orissa, UP, Bihar and MP had a level much below this average. Thus it can be seen that there is a wide disparity in the availability of doctors in states In the case of nurse-population ratio also there is a wide disparity. Maharashtra is per 1981 staistics had 54 nurses for a lakh of population whereas Tamil Nadu 52, Kerala 37, Punjab 35 and so on. Uttar Pradesh has the lowest in this regard and the ratio is 7 nurses for one lakh population

Bed-population ratio

One of the major indicators of health development is the bed-population ratio. There was considerable expansion of hospitals and dispensaries and simultaneous increase in the number of beds in hospitals.

The number of beds per lakh of population increased from 31 in 1950 to 68 in 1975 and 74 in 1981. The actual number of beds increased from 1,20,000 in 1950 to 5,05,000 in 1981 which shows nearly fivefold expansion of beds However, this is not reflected in the availability of bed per lakh of population because of the population growth. The statewise look at the situation would indicate that among the major states, Kerala is much ahead in this respect with 176 beds per lakh of population and next comes Maharashtra with 111 beds per lakh of population. Here also Bihar and Madhya Pradesh have the lowest number of beds per lakh of population. There were 7 States which are below the national average of 70 beds per lakh of population. In this area also massive investment on infrastructure is necessary so that the regional disparities can be reduced to a substantial extent. Within the State also, there is wide disparities in the case of manpower availabilty, infrastructure, etc Even in Kerala in the backward districts like Malappuram, Wyna, Kasarkode, etc, the facilities available are far behind when compared to other districts. Therefore, efforts should be directed in reducing the imbalances among different regions in a State also.

The health development objective of the Seventh Plan is expansion of the health programme and development of health related services like nutrition, safe drinking water supply, sanitation, housing, education and social welfare. It is made as part of the package for achieving the goal of health for all by 2000 A.D. The thrust area include consolidation of the created infrastructure and strengthening of the three tier rural health structure, viz., Sub Centres, Primary Health Centres and Community Health Centres, Training and employment of male and female multipurpose workers, etc.

An analysis of the indicative physical targets would reveal that during the period 1985-90, an addition of 1 lakh health guides, 54,000 Sub Centres, 12,000 and 1,553 community health centres will be in position by 1990. Besides, it is targeted to train 1.2 lakh multipurpose health workers, employment of 50,000 male multi-purpose workers and training and employment of 13,000 male and female health assistants during the period.

The national Minimum Needs Programme implemented from the Fifth Plan deserves special attention. The objective of the programme is to establish a network of basic services and facilities in all the areas up to nationally accepted norms within a specified time The programme is designed to assist in raising living standards and in reducing the regional disparities in development The Sixth Plan provision on Minimum Needs Programme in the State sector amounted to Rs. 5807 crore which is increased to Rs 10081.72 crore in the Seventh Plan Besides, the Central Sector provision is estimated at Rs. 1464.22 crore.

Health for all, a distant goal

The attainment of the objective of health for all by 2000 A.D. will remain as a distant hope unless the packages are given due attention. The problem of under nutrition and malnutrition widely afflict a considerable section of the society. The prevailing high mortality rates among infants and the morbidity patterns have a link with malnutrition. The worst victims of this problem are children in the age group 0-6 years, pregnant women and nursing mothers. Surveys on nutrition reveal that nearly 50 per cent of the households in different states of the country consume food which is quite inadequate to meet their requirements either in calories or proteins or even both. Thus the nutrition standards of the poor must have to increase substantially and hence the massive programme of Integrated Child Development Services and other nutrition programmes like women literacy, rural sanitation and water

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Can India afford this brain-drain?

Dr. Biswanath Ghosh

Migration of scientists and technical personnel from India has for long been a matter of serious concern for the Government. Majority of those who go abroad for higher studies or specialisation rarely come back. Why? How does this affect the developing country like India? Would stringent curbs through legislative means prohibiting migration of such personnel be proper? These and other related questions on brain-drain have been dealt with by the author here.

While addressing the newly formed Indian National Congress of America, the Prime Minister Shri Rajiv Gandhi, on his visit to the United States in June 1986, insisted on Indians there coming back home. He said, 'I will tempt you to come back home' His predecessor, Smt Indira Gandhi also wanted migrants to come back home

Emigration. why?

Notwithstanding the temptation the migrants are reluctant to come back to India Expansion of higher education in India during the last two decades bears no relationship to economic growth of the country Finding no suitable employment within the country qualified men and women are forced to migrate to the western countries For countries which are suffering from an excess of high level manpower in relation to available employment opportunities, emigration offers one means of reducing unemployment In the nineteenth century, it offered an outlet for the displaced rural labour that could not be absorbed in industrial employment and thus international migration provided a safety valve. In Jamaica the notable reduction unemployment in the nineteen fiftees was officially attributed partly to emigration. In Tunisia where in the mid-sixties the poor of unemployed and under-employed was estimated at some 200000 persons and where population was increasing at the rate of 31000 per annum, emigration was said to be reducing by 10000 per year the number of persons in search of work

But today, there is a little scope for reducing the pressure of unemployment in a big labour-surplus economy like India through massive emigration for two reasons (1) the new continents by now are fairly well populated and (2) the rigidity of modern immigration laws. Moreover, even if international migration were possible, it is a debatable question whether this outlet is a desirable channel to relieve the pressure of unemployment in our country because those who migrate from India to richer lands are those very people whom a developing country like India cannot afford to lose In other words, the brain drain — the migration of scientists, engineers, doctors and professional workers—causes much greater damage to a poor country which can ill afford to lose the fruits of their educational investment.

Braindrain in the yore

The migration of scientists is not a new problem—it is as old as civilization. The flow of scholars grom Greece to Rome fall within the category of brain drain The Ptolemies drew scholars and scientists from Greece to Alexandria and it was obviously a case of brain drain. Brain drain should be differentiated from 'skill drain'. Brain drain involves movement from one country to another of persons with

a high degree of education. But other types of international migration, such as massive movement of population from Europe to USA, Canada and Australia that took place in the nineteenth century, was not selective enough with regard to formal educational level to call it brain drain. This was not a case of brain drain in its present day meaning but rather a 'skill drain'. Brain drain is a post-World War II phenomenon.

And now

The outflow of highly educated manpower elicits widespread criticism. Noting that 16 p.c. of Britain's new Ph Ds were lost through emigration, a British journal expressed the fear that the Government, by the millions spent on technical expansion, was merely erecting a vast and expensive preparatory school for Amercian industry. Britain's former Health Minister insisted that Britain simply cannot afford to train doctors for the purpose of swelling the membership of the American Medical Association. In the USA, a leading Senator considers the brain drain a national disgrace, which accentuates the gap between rich and poor nations.

Today we view the international flow of talents and skills in a different perspective from earlier observers In the first place, as pointed out by Brinley Thomas, the great outpouring of human capital in the nineteenth century from Europe to North America was complementary to an export of physical capital and unskilled labour Flowing from the developed countries, it created an infrastructure in the developing continent and had important feedback effects on the exporting countries. It resulted in a progressive narrowing down of the gap between developed countries, it created an infrastructure in sending and receiving countries.

Affects the underdeveloped

In contrast, the current wave of migration has moved in the opposite direction from that of physical capital. The underdeveloped countries have found themselves badly short of technical and professional personnel The explanation for the reverse flow is that there is a 'common market' for brain power which transcends national boundaries

From poor to the rich

The international circulation of human capital reveals certain well demarcated patterns of flow First, there is a flow of trained professional people from the former colonial territories to the ex-imperial European nations and from Europe and elsewhere to North America and particularly to the USA Second, there is a movement of trained professional people from lower-income to higher-income countries, as is evident from the largescale immigration from Afro-Asian countries to the richer European countries and from richer European countries to still rich American countries.

Braindrain, but natural !

The problem may be looked from national or international position Following the logic of the international model the brain drain simply reflects the operation of an international market for specialised human capital. Such capital will tend to move those regions where its productivity is high and out of regions where its productivity is low. As long as human capital is free to seek the highest reward it will automatically tend to flow into uses where its contribution is greatest, where it can do the most good This is another way of saying that resources will be allocated on a world-wide basis in the interest of maximizing world output, they will be allocated on the basis of optimal efficiency In other words, we are better off because of brain drain. An Indian engineer would earn more in America than in his native land and his higher salary reflects his greater usefulness in one place than another and nothing is to be gained by interfering with his migration

Integrates world economy

Brain drain is simply one aspect of the trend towards closer integration of the world economy, which has been proceeding rapidly since the Second World War The trend towards closer world economic integration is a powerful force operating to raise world living standards by disseminating techniques, practices and products that increase human productivity and satisfaction throughout the world One important effect of increasing world economic integration is that the market for educated professional people is becoming increasingly an international rather than a national market, with corresponding economic pressures towards the equalisation of prices for professional skill throughout the world, manifest in the phenomenon of brain drain

But it should stop

From the national viewpoint the outflow of highly qualified manpower involves a loss to the sending country and a gain to the receiving country, where the sending country is poor and the receiving country is rich, it is equally obvious that the loss exceeds the gain, in other words, everybody would be better off if brain drain were stopped

If we adopt the nationalist principle that in each country the government is seeking to maximize the rate of growth of real output per head, it is desirable for a country to increase the ratio of skilled to unskilled persons as rapidly as it can, because skilled persons typically produce more per head than unskilled persons; and the emigration of skilled persons will generally mean, from the nationalist stand-

point, a loss for the country of emigration and a gain for the country of immigration. Since it is expensive to produce top grade professional manpower and it usually embodies substantial doses of public investment, its loss through migration represents a 'gift' from one country to another — typically from a poor country which cannot afford it, to a rich country which does not need it

We do not have complete statistical information about the total numbers involved in the brain drain from India to the advanced countries as a whole It is estimated that in 1980 more than 15,000 Indian medical doctors were working abroad and they represent a lost investment of $144 million to the Government of India.

Generate national outlook

Some economists try to answer the international migration of human capital in terms of push and pull factors, the push factors being those aspects in the country of origin for a given profession — which produce emigration and the pull factors being those aspects in the country of destination — for the same profession — that induce the immigration Obviously, the higher rewards and opportunities, research facilities and logistical support in the advanced countries exert the economic pull Though the income differential between developed and developing countries may appear to be the most obvious cause of the brain drain (an Indian professional earns about 10 to 13 times in the USA compared to his earnings in India) it has been found that this income differential can be compensated by job satisfaction The Japanese case provides a good example Notwithstanding the salary differential, migration from Japan has been relatively low The remarkable national consciousness of the Japanese people is the cause of low migration

Too much educational expansion, low wages and lack of research facilities in India supply the push elements in the brain drain from India

A beneficial process, how?

However, brain drain should not be considered as an unmitigated evil The international circulation of human capital is a beneficial process, since it reflects the free choices of individuals who choose to migrate It is the obverse side of the most salutary fact that there is free communication and contact in the scientific world today. Moreover, such migration may be expected to raise total world output and therefore to be economically beneficial to the world as a whole, by transferring skilled labour from countries where its productivity is low to the countries where it was higher

The report on brain drain by the UN Secretary General (1979) suggested the creation of an international pool of skilled manpower for development. The countries which pronted from the immigration of such talent might make financial contributions to development through support for this pool. The developing countries were also asked to bring their educational policies into closer relation to their needs in order to enable professional graduates to find suitable openings The manpower policies should be co-ordinated with their development needs.

Broadly speaking, the advantages to the home countries of the migrants can be judged by the extent to which they are able to send home remittances in cash or in kind Recently the Government of India itself admitted that the phenomenal rise in our foreign exchange reserves was, to a large extent, the result of an upsurge in these remittances.

The most immediate consequence might be expected to be a major contribution to the investment resources of these countries, and in fact this is the view officially taken in Turkey. However, in several countries this does not necessarily happen On the contrary, it may be that the greater part of remittances is devoted to current consumption needs Although the initial impact of such an injection of additional purchasing power may be inflationary, the longer-run effect is to promote employment to produce the additional goods

An inter-ministrial group headed by Mr. B. R. Patel, Joint Secretary (Manpower) set up some years back to study the problem of brain drain in India, stated in its report that it would not be desirable at the present moment to prohibit the migration of highly qualified personnel from ndia by legislative means After studying the magnitude of the problem, the group felt that until such time as India was in a position to offer every highly qualified person a position for work commensurate with his qualifications, any restriction of movement would be undesirable as it might frustrate individuals by causing a waste of their talents The group also referred to a suggestion that the developed countries should be persuaded to modify their immigration policy as to discourage the entry of highly qualified personnel from developing countries

The Education Commission (1964-66) did not consider that brain drain posed a serious problem for India, 'Those who go abroad generally obtain far better research facilities. However, not all who go out of India are necessarily first rate scientists, nor are they of critical importance in the country's requirements We recognise that the seriousness of the brain-drain is often exaggerated but even so the problem is of sufficient importance to merit a close and systematic study'

We can safely conclude that much of the brain is no loss to India it provides a convenient safety-valve

(Continued on page 33)

Backing up the backward

Dr. Pitamber Nailwal

Notwithstanding increasing Plan allocation for the hill region of U.P. in successive Five Year Plans, the region continues to be economically and industrially backward with migration continuing unabated. In this article the author analyses the industrial scene obtaining in the region, and feels it suffers because of faulty planning. He suggests setting up of certain industrial units, particularly forest and mineral based in the public sector, to boost the economy of the region.

DESPITE STATISTICAL REFLECTION of higher per capita output from commodity producing sector —Rs 1,068 as against Rs 770 for the State and for other regions—Western Rs. 960, Eastern Rs. 611, Central Rs 767, and Bundelkhand Rs. 840—in 1980-81, the income actually accruing to the hill people is altogether different and perhaps is the lowest in the State. As a result, all the eight districts which comprise the hill region have been proclaimed as economically and industrially backward

Accelerating the pace of development of the hill region appears to have begun from Third Five Year Plan and thereon, when funds were specially earmarked for the region. No doubt the plan allocation has increased from Rs. 50 04 crore during Third Plan to Rs 73 34 crore in Fourth Plan, Rs 156 52 crore in Fifth Plan, Rs. 570 00 crore in Sixth Plan and Rs 1007 crore is estimated for Seventh Plan, yet nothing remarkable of the nature has been achieved. There has been even no marked diversification of economic activities and the region predominantly remained oriented towards agriculture despite little arable land, evidently 75 per cent of people carrying out agricultural operations on less than 25 per cent of reporting area

Workers, in order to substantiate their meagre cash income, had to migrate from the region According to the studies conducted on migration it has been found that the rate of migration on an average has been one male member per family The reasons for this are stated to be associated with faulty planning which appears to have relied upon development of infrastructure and service sector on the one hand and development of material resources on the other, more than caring for generating employment opportunities for local workers and yielding benefits to them

Further, it is being argued that contrary to expectation, some development programmes in the area have led to ecological crises such as soil erosion, deforestation, etc The resulting long spells of draught have also created problems of fuel, fodder and food It is needless to say inter-regional exploitation had also been on an increasing scale with regards to both physical and financial resources

Plan outlay for industries

Development of industries which could have provided solution to inherent contradictions seems to have been given low priority This is evident from the ratio of plan allocation as depicted below ·

Table 1

Plan outlays for industries in the hill region of U.P.

(Rs. in lakhs)

Plan priod	U.P. State	Hill Region
1st Plan	6 35	..
2nd Plan	12 92	..
3rd Plan	21.10	1 72
3 Adhoc Plans	N.A.	0.45
4th Plan	42 78	2 92
5th Plan	218 27	6.92
6th Plan	570.00	36 16

(Source—D.I. Kanpur)

Despite this, manufacturing activities remained an integral part of the whole production process. Contribution of organised and unorganised manufacturing sector in the total output of the region from commodity producing sector was 6.4 per cent and 2.8 per cent respectively in 1980-81.

Factory sector industries

In the factory sector the region has slightly an edge over Bundelkhand. An inter-regional comparative picture can be visualised from the facts given in table 2 :

Table 2

Inter-regional comparison of industrial activities during 1983-84 in percentage

Particulars	Regions					
	Western	Eastern	Central	Bundelkhand	Hills	U.P.
No. of Registered Factories .	63	12	21	01	03	100
No. of Working Units . . .	77	78	83	82	76	79
Total Investment	25.4	10.2	60.9	1.4	2 3	100
Employment	44 2	17.2	34 5	1.3	2.8	100
Production	51 6	16.5	26 9	1.3	3.4	100

(Workout from D.I. Progress Report)

Hill region seemed to occupy approximately 3 per cent of the State's industrial activity in 1983-84—almost a position it even held in 1976-77 as against 2 per cent in 1969-70. Anyway this can be taken as a positive trend because this is further evident by an increase in the value of Industrial production which rose from Rs. 49.62 crore in 1976-77 to Rs. 127.54 crore in 1983-84. In the same tone capital investment also increased from Rs. 51.72 crore to Rs. 96.99 crore during this period.

Industrial units in hill region, which were only 20 in 1955-56 increased to 242 in 1983-84. The progress in number of factories and factory employment during the intermittent period for 1960-61 to 1983-84 is as follows :

Table 3

Factories and factory employment : Hill region

Year	No. of registered factories	Employment	Changes	
			No. of factories	Employment
1960-61 . .	93	7054	..	..
1969-70 . .	89	6294	(—)4	(—)760
1976-77 . .	198	15057	105	8763
1983-84 . .	242	21709	44	5652

Number of factories and factory employment which recorded a downward slip during sixties began to receive upward swing since 1970. This might be an impetus of encouragement policy, but its slump again in beginning of eighties needs further efforts of improvement.

Public Sector

Among the Public Sector units important undertakings in the region are—Spinning Mills, Kashipur (Nainital), Sugar Mills, Kichha (Nainital), Doiwala (Dehradun) in in State Sector; Almora Magnisite, Almora, U.P. Rigitals, Bhowali (Nanital) in joint sector; and Sugar Mills, Bijpur, Nadehi and Sitarganj (Nainital) in Co-operative Sector. In addition to these Kumaon and Garhwal Vikas Nigams have come up with establishment of 6 and 5 units respectively in their areas of operation. Further 9 units either have been proposed or established by Agro-industries Corporation. One unit of H.M.T. at Kathgodam is also on way of beginning production.

Ownership status

After individual and Hindu Joint Family ownership, which owns almost 50 per cent of Industrial units and which are now a doubtful proposition for entrepreneurship in hill region because of many complexities, public sector industries seem to be viable alternative. Private corporate sector which could have been a possible substitute occupies but only 10 per cent of Units. This indifference can be anticipated owing to lack of managerial and entrepreneurial skill among local people and little interest shown by outside enterprises. Therefore, while establishing public sector units in the region it should be kept in mind that these units help absorption of local workers in higher pro-

portion contrary to what has appeared in some institutions.

Actually working units

As could be seen from table 2, really working units in the region accounted for 76 per cent as against 77 per cent in the State. This is the lowest ratio of working units among the regions. For, the ratio of working units was—Western (77), Eastern (78), Central (83) and Bundelkhand (82).

According to broader classification of industries, highest percentage of closed units in the region was Agro-based industries (25 per cent) followed by Engineering industries (24 per cent), chemical and miscellaneous industries (23 per cent each). This corroborates with contention that resource based industries are loosing scope in the region.

The position of working units in small scale sector is in no way better. According to the Directorate of Industries. U.P., the number of working S.S.I. units at various Growth Centres in Hill region was :

Table 4
Registered/working small scale industries

Name of Growth Centre	Registered Units	Working Units	Percentage
Kotdwar (Garhwal)	53	26	49
Chamba (Tehri))	13	5	38
Uttarkashi (Uttarkashi)	9	5	55
Chamoli (Chamoli)	23	21	91
Vikas Nagar (Dehradun)	12	6	50
Ramnagar (Nainital)	45	25	55
Ranikhet (Almora)	48	12	25
Lohaghat (Pithoragarh))	10	9	90

(Source—D.I. Progress Report 1978-79)

Diversification of industries

Analysis of registered industrial units reveals that while industrial activities in 1969-70 were well diversified, as industries almost of all type as per broader classifaction were located in the region, it grew highly concentrative in 1983-84. Industries which became prominent in private sector were Agro-based, Chemical-based and Engineering-based, besides some Miscellaneous-based industries.

This reflects that excepting Agro-industries other resource based industries lost locational advantage, yielding more scope for demand based industries In fact 9 textile, 7 Forest, 3 Mineral and one Livestock based industries have since ceased functioning.

Looking from the district locational point of view. Dehradun, followed by Nainital, were the leading districts accounting for 60 and 35 per cent of manufacturing units respectively. Chamoli, Uttarkashi and Pithoragarh were almost no-industry districts from factory point of view. Again, on account of industrial diversification Dehradun quoted the highest degree followed by Nainital and Pauri Gahrwal. Other districts have very concentrative activity of industries confining mainly to one ore two types of Industries The extent of industrial specialisation, as worked out for districts of hill region, was—Dehradun (.2205), Nainital (.4711), Pauri (.5875), Almora (.8127), Tehri Garhwal (.9543), Pithoragarh (0.9730), Chamoli and Uttarkashi (0.9750).

Investment/Return ratio

Considering cost|production ratio, it has been found that cost per hundred rupees production on an average is highest in hill region, i.e. 100 : 78 as against 100 74 for the state as a whole. Among the districts Garhwal mandal accounted for lower ratio than regional average as against Kumaon region which quoted for a higher ratio. This is to say 100 : 76 for Dehradun and 100 : 84 for Nainital representing the regions respectively. Comparing the industries by broader categories, the investment return ratio for different industries works out to—Agro based 100 : 187. Chemical based 100 : 102, Engineering based 100 : 237 and Miscellaneous based 100 132 Among the industries, therefore, Engineering followed by Agro based and Miscellaneous industries have good scope for profitability

Table 5
Broad based classification of industries and locational linkage—hill region

Sl.	Type of Industry	1969-70		1983-84		Change in 1983-84 over 1969-70	
		Number	Employment	Number	Employment	Number	Employment
1.	Agro-based	25	3453	44	8688	19	5235
2.	Textile based	9	1226	.		(—)9	(—)1226
3.	Forest based	7	100	..	..	(—)7	(—)100
4.	Livestock	1	18	.	.	(—)1	(—)18
5.	Mineral based	3	113		.	(—)3	(—)113
6.	Chemical based	8	276	13	3170	5	2894
7.	Engineering based	27	889	80	2462	53	1573
8.	Miscellaneous	9	21[illegible]	105	7389	96	7170
	Total	89	6294	242	21709	153	14505

(Source—D.I. Kanpur)

Potential Industries

Workingout from employment and investment-return quotient, potential industries in the factory sector for the region could be—Agro-product|Fruit processing; Metal and other Engineering; Chemical and drug based, and some other demand based miscellaneous units. In addition some forest and mineral based units exclusively could find scope for establishment in public sector because of policy decision on ecological grounds.

(*Continued from page* 22)

electricity, etc. The combination of sugar factory and distillery in the past proved to be a success. Unfortunately, many schemes where this type of integrated solution would have shown better results were worked out in isolation. There is scope of increasing their productivity. The increase of productivity in these crops in this region is also possible. This may be achieved through inter-agency collaboration, transfer of technology in agriculture, effective utilisation of science and technology in agriculture and through better management.

The suggestion of developing a sugar-alcohol-paper complex needs serious consideration by planners. From all predictions such a complex should pass the test of economic viability. ☐

(*Continued from page* 26)

supply are formulated with a link in the light of the objectives outlined above. The concept of community health in a participatory process supported with health education is conceived and has a major role to play in the Seventh Plan This is not going to achieve a major breakthrough as it had happened in communist China through the peasant doctors or barefoot doctors The situation calls for steps on a warfooting to achieve the health objectives in general and particularly in the states where the facilities are lagging very much behind. ☐

Nuclear Science in Agriculture Research

Nine Research Institutes and seven agricultural Universities in the country are using radioactive isotopes in agricultural research. However, the main work is being done at the Nuclear Research Laboratory of the Indian Agricultural Research Institute (IARI) at New Delhi and the Bhabha Atomic Research Centre (BARC) at Trombay.

Nuclear science is being used in agricultural research for developing new varieties, through mutation, to give them characters like high yield, better quality and resistence to stress conditions Nuclear science is also being used for studying the efficiency of fertilisers and water use by the plants under different cropping systems.

Nuclear radiation and radioactive isotopes are also being used for preservation of grains, fruits and vegetables and for control of insect pest through introduction of male sterility

Nuclear science is an effective tool for quick estimation of oil content in oilseed varieties and for estimation of residual effect of pesticides. ☐

Urban Basic Services Programme launched

An Urban Basic Services Scheme has been launched to improve the quality of life of the urban poor in the country. The Scheme is aimed at creating awareness and to motivate collective community organisation in improving the quality of life in general and the development of the children and women of the low-income urban families in particular.

Forty per cent of the expenditure on the Scheme will be met by the United Nations' International Children's Emergency Fund (UNICEF), another 40 per cent by the State Governments and 20 per cent by the Central Government. The UNICEF has pledged an assistance of 9.2 million US dollars for this Scheme.

It is proposed to cover 36 districts in various States and Union Territories under this Scheme during 1986-87. ☐

Loan rules for purchasing tractors relaxed

Conditions for obtaining loans from financial institutions for the purchase of tractors are being liberalised. The bank loans will be available to farmers with holdings of more than eight acres. Presently this limit is ten acres.

It has also been decided to grant loans for the purchase of tractors of all sizes and classes without any restriction. The farmers will also be eligible for the second loan after three years as against the earlier limit of seven years. It is subject to the condition of repayment of the earlier loan. ☐

(*Continued from page* 29)

for its excess supply of educated manpower and to the extent that some of them return, they return with improved productivity due to training that has cost India nothing. Certain kinds of brain drain, especially of doctors, may indeed be harmful to India, but until all efforts have been made to match resident manpower with unfilled vacancies there is little point in repartriating Indian brains residing abroad. ☐

BOOKS

International relations

INDIA, UNITED STATES AND PAKISTAN : A Traingular Relationship, By K. Ram Chandra Rao. Published by Himalaya Publishing House, Ramdoot, Dr. Bhalerao Marg. Girgaon, Bombay-300004. First Published 1985. Pages 275, Price Rs. 150.00.

This is a well-documented work relating to American policy towards Pakistan vis-a-vis India, with all its ramifications. The author's stance is that American policy has been influenced by a desire to contain the advance of international communism led by Soviet Union. As such, the U.S. desired to involve itself in the sub-continent and tried to get India on her side, but India adhered to policy of non-alignment and kept herself away from super power blocs. Pakistan seems to have suited the American purposes, while for former's interest was to settle the Kashmir dispute in her favour. Be that as it may, their perspectives were not only tainted but totally misguided.

The internal conditions of Pakistan—economic backwardness and stagnation, and the resultant periodical complications—seem to have posed a more serious threat to her Government than external dangers. According to the author, American policy-makers have ignored that the fear of Hindu domination of certain sections of Muslims at places where they were in a minority played an important part in the creation of Pakistan. Consideration of history, ethnic origin, language, civilisation, economic viability and the consciousness of those who made up her population did not have sufficient relevance in the creation of Pakistan. "This attitude got transformed into a fear complex against the giant state, India, and Pakistan believed that India was trying to overshadow her. Thus, she did not really have the same apprehensions of the Soviet expansionism as the U.S had. It was India that had been ever present in Pakistani thinking and security considerations."

It is true that several authors and authorities have argued that military aid to a country like Pakistan failed to make any significant contribution to the promotion of U. S. objectives in Asia. Several critics like Morgenthau, Charles Burton, Marshall, and Schlesinger appeared to have implied that American policies towards Pakistan had failed to achieve their purpose. However, it should be asserted that policies did contribute to bringing Pakistan closer than ever before to the United States and made important facilities available to America. The author views that American aid did not stablise Pakistan politically nor did it make her a more loyal ally of the West. "The military potential of Pakistan was not formidable enough, from the standpoint of meeting an external attack either by Russia or China and any nation with their support." Perhaps the author puts his finger at the right place when he observes that one of the U.S. policy directives in South Asia from the American viewpoint was to prevent conflict between India and Pakistan. Instead of bringing India and Pakistan together, the implications of American policy had set one against the other, he asserts.

Navin Chandra Joshi

Urban economics

The Practice of Urban Economics. By Alfred J. Watkins, Vol. 107; Sage Library of Social Research, Sage Publications, Post Box 3605, New Delhi-110024 Price : Hardback $ 24.00; Paperback 12.00; Pages 248.

The Study of the process of urban economic development was not very distinct from the general economic development till about three decades ago. The awareness of the importance of urban economics in recent times has awakened scientific enquiry into the processes, stages and the destiny of the emerging urban scenario. The student of urban development would now have to take into account the importance of industrial locations theory in shaping the health of the city. The book under review brings together the locations theory and practice *vis-a-vis* the process of urban development and growth.

The book opens up with an excellent introduction to "uneven development" and considers in detail the Classical Location Theory. Herein Von Thunen's concept of spatial determination of rent is well expounded, bringing out that the classical economists have emphasised the importance of industrial location keeping in view the benefits of large scale economies, industrialisation and urbanisation economies. Since the importance of "Market" is missed by the classicals, the author expounds the Market-Areas and Central Place Theory of location The logical extension to freight equilisation scheme for essential commodities (Basing Point pricing) is not lost sight of. After this scholarly analysis, the connected issue of the importance of industries—basic vis-a-vis non basic ones is considered. The book also discusses the dynamic models of urban growth based on industrial structure as well as the ones dependent on capital accumulation and activity cycles In addition the book contains the computed "urban age" of 308 central cities in USA based on population threshold and growth rate algorithns, besides an excellent bibliography

The book is an excellent compendium of the extant urban development theories. There is enough material to make any serious student of urban affairs to think and revise the previously held views on the process of national development and city growth. The subject matter and lucid and interesting style make the book an excellent asset

R. C. Srinivasan

Modern eye care during Seventh Plan

TEN CENTRES OF EXCELLENCE on the pattern of Dr. Rajendra Prasad Opthalmic Centre, New Delhi, will be set up during the Seventh Plan to train adequate number of personnel in modern eye care technologies. This will help reduce the prevalent rate of blindness from 14 per 1000 population to five per 1000 population by the year 2000 A.D.

Under the National Programme for Control of Blindness, eye camps are organised to provide immediate relief to the needy. Permanent eye care facilities with specialists are also provided alongwith health education under the Programme.

Eighty Central Modbile Units, each catering to the needs of nearly five districts, have been established. These units organise camps in the remote rural areas to provide medical and surgical treatment to the eye patients besides looking after the eye health education and survey and screening of the population.

All the district hospitals have been strengthened by adding equipment and manpower so that each district has the necessary eye care facilities at the intermediate level. At the tertiary level also, 58 Medical Colleges have been identified for the development of manpower and research in modern eye care technologies. □

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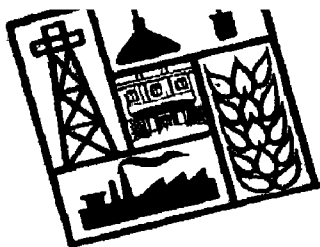
Lead in petrol to be reduced to check air pollution

THE CENTRAL BOARD FOR THE PREVENTION and Control of Water Pollution (CBPCWP) has asked the petroleum industry to reduce the level of Tetraethyl Lead (TEL) in motor spirit. According to the Annual Report of the Ministry of Environment and Forests for the year 1985-86, the level of TEL in motor spirit is to be reduced from the existing 0.55 gm./litre to 0.15 gm./litre.

The Report says that consumption of motor spirit containing lead has increased by almost twice the anticipated rate of five per cent since June 15, 1983. The Octane Value of motor spirit has also risen from 83 to 87 with the possibility of further increase to 93.

Of the eleven operational oil refineries (excluding BRPL, Assam) only four refineries are producing motor spirit with TEL content ranging between 0.27 and 0.44 gm. of lead/litre of motor spirit. The remaining seven produce motor spirit with TEL content ranging from 0.06 gm. lead/litre to 0.20 gm. lead/litre. The report further says that as lead content of the motor spirit produced in the refineries of the east and north east sector is high. Lead content in surrounding air at street crossings of Guwahati and Patna is eight to ten times higher than those in Delhi and Calcutta. This necessitates the need for introduction of secondary refining at the Digboi, Guwahati, Barauni and Madras refineries.□

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Educating rural childre[n] though TV

NFXT ISSUE

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Educating rural children through television

Dr. P. C. Joshi

In this paper the author discusses the possibility of evolving models for educating rural children through the potent medium of television in developing countries. He says majority of our children are in the rural areas and they are forced to become income-earners at a very early age. This comes into sharp conflict with their right to be a learner. He, therefore, feels educational software will have to be adapted to the needs and characterisation of each occupation and social group to which the children belong. The author, however, sounds a note of caution that since educational television for rural children is a new concept, it needs to be protected from overgrowth of consumerism.

THERE IS NO POINT in discussing anymore whether *to have or not to have* high technology in he field of education for children, specially rural children. The late Dr. Vikram Sarabhai prepared a paper in 1969 entitled "Television For Development" which recommended the exploitation of high communication technology by developing countries in their national war against poverty, illiteracy and social backwardness. The SITE Experiment, which was launched on a pilot basis in selected states in rural areas, operationalised the approach embodied in Dr. Sarabhai's path-breaking paper. In my view the evaluations of this experiment warranted not a retreat from but a forward movement on the prescribed path,—that of utilising the most advanced technology for educating millions and millions of children and adults in isolated and scattered villages of a sub-continental country like India. And the example of India, a pioneer and pace-setter in this field of educational television for rural children, has been followed later by many other developing countries which earlier were not sufficiently aware of the role of modern technology in education and development

The Soft-ware Planning Committee appointed by the Ministry of Information and Broadcasting in India in March 1983, with which I was associated, also took up the question of educational television The Committee toured many parts of India and interviewed a cross-section of the common people--peasants, artisans and labourers in villages and industrial workers and lower-middle class employees in urban centres. We found to our delightful surprise that the masses even in the remotest areas were very much aware of the existence of television. Again, they were far more aware of the uses of television for education and development than the elite classes which often regarded television mainly as a source of titillating entertainment Further, rural and urban masses were keen to have access to television and to have its support as a source of information and education to them in the context of their sharpening struggle for existence in an *unequal* society. In fact, they suggested to us various kinds of programmes which could be useful for them in solving their day-to-day problems including the problems of education of their children who do not always have access to the school

Children in the third world :

Since this paper is focussed on children, specially rural children, I would like to emphasise that there is a major qualitative difference between poor and rich countries about which we are not sufficiently conscious. In the Western developed societies the

demographic composition is qualitatively different and children do not constitute such a *large* and *critical* group in the demographic pattern as in developing countries like India. Here children constituted 40 per cent of the total population in 1980. The full implications of this fact are not yet sufficiently appreciated for planning in general and educational planning in particular. We shall be more sensitive to the role of high communication technology for child education in developing countries if we are sufficiently aware of the vast size of the child population and the demand that this size would make on our scarce resources, both material and human, for coping with their educational needs. The major proportion of these children is concentrated in rural areas. Further, of the total population of children, the largest proportion belongs to poor families in rural and urban areas.

......mostly working

The educational challenge in regard to children assumes a new dimension if we take into cognizance the poverty dimension of the families to which these children belong. This means that a very large proportion of children consists of *working children*—children who are either self-supporting or supplementing the earnings of their parents through low-paid unskilled work of various types; or are assisting their parents in family occupations in crop-cultivation, animal husbandry, fishery, small scale handicrafts, trade and other services. In other words, children who should be devoting their entire time for their schooling and for preparing themselves for entry into working life as adults have *already* entered full-time or part-time working life as child labourers.

not learning!

In the case of these working children the pressure for becoming an *earner* at a very early age comes into sharp conflict with their right to be a learner. Under the unconventional life situations conventional methods of schooling and education suited to middle class way of life will not work. That is how we are confronted with the phenomenon of 65 per cent of children belonging to school going age being actually *out of school* or having no access to school in the whole of India, and 80 per cent of these out of school children are in the backward states. This is the reason why we are also confronted with the phenomenon of massive dropouts and also by the fact that the dropping out is highest during the busiest months of agricultural operations and is lowest during the months when the pressure of work in agricultures is considerably reduced.

There are no reliable estimates of the number of child labourers in India or other developing countries. Nor are there meaningful field enquiries into conditions of work and levels and types of wage payments for children. There do not yet exist legal safeguards, protection, security and welfare of child labour. The Seventh Plan document has virtually treated this problem of child labour as an insoluble probelm which can be improved only by accelerating economic growth. In a plan document of more than a thousand pages only a short paragraph has been devoted to this problem. No studies or field investigations were perhaps undertaken or commissioned by the Planning Commission for the purpose of evolving an approach and policy on this vital question of child labour.

......the magnitude

What proportion of children are engaged in child labour in India? It is a sad commentary on our sensitiveness to this problem that we do not yet have a reliable estimate of the magnitude of child labour in India. Some broad idea can be had from the following extract from a report of a Seminar organised by the Informal Group called "The Concern for the Working Children" at Bangalore in November 1985:

"Child labour exists in all sectors of urban and rural economics....... According to official statistics, based on a sample survey in 1983, there were 17.36 million working children below the age of 15 years. The Operations Research Group, Baroda, estimated it, however, at 44 million in the same year. Using the same percentage of calculation, the figure for 1985 would be 50.22 million. According to the ORG percentages, the age group 5—15 years is 26.2 per cent of the total population or 196.5 million. At least 98.25 million children are most likely supplementing family incomes or supporting themselves. Thus the figure of 50.22 million is on the conservative side and the actual number of working children might be any where between 90 to 100 million."

It is obvious that from almost one half to two thirds of the entire population of children in the 5—15 age group can be characterised as being in the category of working children if this category covers all those who are either (i) engaged in work in household economic activities in agriculture and non-agriculture; (ii) or serving as labourers under an employer outside the household on a regular or a casual basis; and (iii) those who are girls and are participating in domestic, unpaid work. Working children thus belong to the vast unorganised, diffused sector where government's protective and regulating laws are unoperative and non-existent.

Education a luxury

When we discuss the question of child education and especially of educational television for rural children, we must ask : Who is the child? Is he or she available for formal schooling? We shall find that for the largest proportion of children education is a luxury which they can ill-afford as they have to think first of contributing to family income for

their very subsistence and survival. To quote again the Report of the Bangalore Seminar mentioned earlier :

"In 1982, of the 224,224,000 children in the age group 4 years to below 18 years, the rate of gross enrolment in schools was 42.78 per cent (Fourth All India Educational Survey, NCERT 1982). Where are the rest of the children ?" What pattern of schooling and education will suit such working children who are outside the formal system of education—that is the question which we must ask. Has educational television any role in the case of working children who are first in a *work situation* before they can think of being in a formal *school situation* ?

Gaping disparities

It is extremely unrealistic to think of children in the aggregate or in the abstract as an undifferentiated and homogenous category. In actual life, at the ground level we shall find that children are either urban children or rural children; and children of the upper, middle or lower classes. In the rural areas there are children of surplus-producing rich farmers or of self-employed peasants or of poor cultivators in rice-growing, wheat-growing or millet-growing regions. They are children of carpenters, blacksmiths or other categories of artisans; children of labourers of various types or of fishermen, or of those engaged in other types of agricultural activities outside crop production. There are children of different caste backgrounds—children of upper castes, middle castes and scheduled castes and tribes. Further, children come from vastly heterogeneous linguistic regions of India speaking different language and dialects and belong to different levels of socio-cultural development and exposure to modern life.

This means that the elite view of the educational problem as it appears from the top does not reflect the social differences and inequalities arising from class, caste, regional, religious, ethnic and linguistic divisions of Indian society and even of societies in other developing countries. We must recognise that there is no "typical child" in India and there can, therefore, be no single model of educational communication which can comprehend and encompass children placed in bewildering varieties of social situations.

....of the elite and the masses

As a sociologist I draw attention to the interlinking between the social structure and the economic system on the one hand and the educational system on the other. I wish to emphasise the importance of the emerging dual society—of the socio-economic distinction between the classes and the masses for educational processes in India and other countries. I have still not overcome the shock of my first visits to Indian villages when I found the village elite describing the masses as "the etceteras". From the elite point of view the masses constituted the *declasse*. This typifies the inner structural cleavage within society including rural society in most developing countries.

Corresponding to the "elite-society" at the top and the "mass society" below are, therefore, two divergent educational systems prevailing in rural India—the modern formal system of education for old and new elites and the traditional, informal system of education for the masses ; the former supported by the state and the latter having no state support but being the main source of education for the masses. The sons and daughters of peasants, artisans, labourers, fishermen, blacksmiths, carpenters, etc., etc. have had no access to the formal system of schooling. They have derived for centuries their general socialisation from institutions of the traditional society—family and kinship, caste and the village community and their specific training in productive skills from the family and caste or sub-caste organisations. Whatever may have the role of caste in promoting inequality, it has performed some positive economic and social functions as an occupational guild and as an agency of skill transmission from generation to generation.

Disintegrating traditional system

An important dimension of social change in India is that the mass-oriented informal educational system has been disintegrating at a much faster pace than the growth of the modern system of formal schooling. The modern formal system is also dominated by the elite and is not yet taking the place of the traditional system and meet the educational needs of the masses. Further, the role of religious institutions, of joint family, caste, neighbourhood and village community as socialising agencies has been declining at a rapid pace. This has disastrous consequences for children of poor families. They are condemned to "grow" more and more in an institutional and moral vacuum and to be shaped by forces released by an unguided social transition.

The problems of educational communication have to be viewed from this wider perspective of a society in transition characterised by loss of traditional agencies of communication and education which were earlier accessible to the masses and the appropriation of modern agencies by the privileged elite groups.

The Gandhian view

Among the political leaders in India, Mahatma Gandhi alone had an unerring insight into the basic problems of the masses both in the economic and the educational spheres.

Take the following statements from Mahatma Gandhi :

"Whatever may be true of other countries, in India at any rate where more than eighty percent of the

population is agricultural and another ten percent industrial, it is a crime to make education merely literary and to unfit boys and girls for manual work in after life. Indeed, I hold that as the larger part of our time is devoted to labour for earning our bread, our children from our infancy be taught the dignity of such labour. There is no reason why a peasant's son after having gone to school should become useless, as he does become, as an agricultural labourer. It is a sad thing that our school boys look upon manual labour with disfavour, if not contemp."

"In my scheme of things the hand will handle the tools before it draws or traces the writing. The eyes will read the pictures of letters and words as they will know other things in life, the ears will catch the names and meanings of things and sentences. The whole training will be natural, responsive and, therefore, the quickest and the cheapest in the world."

"I am a firm believer in the principle of free and compulsory primary education for India. I also hold that we shall realise this only by teaching children a useful vocation, and utilising it as a means for cultivating their mental, physical, and spiritual faculties. It will check the progressive decay of our villages and lay the foundation of a just social order in which there is no unnatural division between the "haves" and "have-nots" and everybody is assured of a living wage and the right to freedom."

These observations lead us towards posing the question : What is the meaning of education, specially in the context of rural children ? If education has to contribute towards improving the life of rural children, we must redefine it in Gandhi's sense of giving training in productive skills a far greater importance than to imparting mere literacy; of giving to formation of character, outlook and sense of values a much higher priority than to just cramming of book-knowledge. Interpreting education in this way, we have a sense of creative challenge in ultilising the vast potential of the audio-visual medium for these objectives.

Role of modern-technology

Modern communication technology which is audio-visual in character is ideally suited for the education of children and of rural children in particular from the point of view of these objectives. This is because it is not necessary for training of production skills that children should first become literate ; one can communicate with them directly through symbols, images, pictures which they can see and through stories recited and music sung which they can hear. In fact, in this way *thinking in images* can precede *thinking in words*, thus *initially* bypassing the print medium. If we have to make not "Saheblogs" and "Babulogs", but productive workers from the rural children of today, then skill formation, character-building and consciouseness formation must precede accets to the print medium. Moreover, this training in skills and shaping of consciousness can relate the learning process to the familiar geographical, sociological and social environments to which the children are exposed ; and it can relate their learning process to the cultural tradition of which they are products.

Education in this sense will not mean alienation from one's natural environment and cultural tradition. It will involve creative re-integration with the environment and positive utilisation of learning potential of tradition. Children of the artisans and peasants have an enormous initial advantage which must be tapped for their transformation into modern agricultural and industrial workers and for their participation in scientific agriculture and modern industry.

The hiatus between the *manual workers* alienated from the system of spiritual and mental production and the *mental workers* alienated from the system of material production is one of the most pernicious legacies of colonial rule. Further, traditional society has also been characterised by the hiatus between *working masses* and the *leisured classes*. Will the new communication technology, and the educational television based on it, accentuate or reduce the hiatus between mental workers and manual labourers, between the working masses and the leisured classes ? This is the question which is at the heart of our policy decisions both in the realm of hardware and software.

Required dedicated Communicators-educators

In my view we need a blending of the Gandhi's social vision, concerns and insights with the vast educational potential of modern communication technology. We need, in other words, a class of modern communicators and educators having orientation in Gandhi's vision and having at the same time the capability to operationalise them in the sphere of education through the creative use of modern communication technology. This means that they combine dedication to the cause of the *Daridra-narayan* with technical capability so that they can bend modern technology for mass-oriented rural education. It must be recognized that without such a socially sensitive community of communicators and educators working within a poor-oriented social framework, modern communication technology will only reproduce and re-inforce the same *structural dualism* which it has created in the economic sphere.

It is also obvious that centrally produced, uniform educational software will not be relevant to each area and to each category of children. Educational software will have to be adapted to the needs and characteristics of each occupational and social group to which the children belong and to each geographical, economic or cultural region of India. This does not mean that these will be no common programmes for all children. It only means that common programme for all will be combined with

such programmes as are specific to each situation. This is the software challenge of vast dimensions which lies before us in evolving software for educational television meant for rural children.

I wish to draw attention to some other problems of producing software which are specially relevant in the context of education of children and particularly of rural children.

We must understand clearly the difference between the learning process in the traditional context and in the modern context. While traditional learning system was oriented towards preparing the child for transition to adulthood, modern learning process is based on the premise of *continuing education of the adults.* Continuing education and periodic re-entry into the learning process of the adults is essential in the non-traditional context, with fast-growing obsolescence of knowledge and information and with fast-changing character of the natural and social environment. Thus the child's proper education makes it obligatory that the continuing education and re-education of the adults (i.e., of all those parents, teachers servant, friends, neighbourhood, etc., with whom the child comes into contact) should be ensured through societal intervention. An uninformed and unenlightened social environment surrounding children is incompatible with their proper education and enlightenment.

The enlightening influences of the school have often been neutralised by the unenlightening influences of the home; and the influences of the school and the home have been neutralised by influences of the outside society. Hence the importance of rescuing the mass media and connunciation agencies from the forces of obscurantism and ignorance Hence also importance of mass media acting as a source of social orientation and not of disorientation. The forces of superstitition, traditionalism and ignorance are specially strong in the rural social situation. These create an environment hostile to the growth of children as enlightened and emancipated beings.

. . innovation and adaptation

The next point that I wish to emphasise is that unconventional teaching methods and techniques have to be innovated and adapted to the rural situation. Conventional teaching amounts to cramming and loading of the mind which damages the mental growth of children. Mere technological sophistication cannot make either the teaching or the learning process easier or more effectives. The modern teacher or the communicator can learn a lot in regard to the education of children from the grandmother and the mother, from the traditional kathakars and storytellers. As a child one learnt much more from the lullabies and tales recited, for instance, by the grandmothers than from routine teaching in the schools What Rabindranath Tagore says on the basis of his childhood experience in regard to the learning process is of very great relevance for childrens' education today To quote :

"Learning should as far as possible follow the process of eating. When the taste begins from the first bite, the stomach is awakened to its function before it is loaded, so that its digestive juices get fullplay Nothing like this happens, however. The first bite bids fair to wrench loose both rows of teeth—like a veritable earthquake on the mouth. And by the time he discovers that the morsel is not of the genus stone, but a digestive bonbon, half his alloted span in life is over. While one is choking and spluttering over the spelling and grammer, the inside remains starved, and when at length the taste is felt, the appetite has vanished If the whole mind does not work from the very beginning its full powers remain undeveloped till the end".

Education of rural children on the lines suggested by Tagore involves training a new community of teachers relevant to the rural situation. Before television is geared to the task of educating children, it must first be geared to the task of educating and training the teachers which is itself a stupendous task.

Decentralised software production

Next in importance is the task of creating educational software relevant to the enormous diversities of the Indian rural social situation. This cannot be created by a centralised system of software production. While the broad principles of software planning have to be formulated at the national level, the production system has to be decentralised and made responsive to local needs, local problems, local colour and local creative talent The present centralised structures both of education and communication are more obstructions than aids to creativity.

At present those who run the communication system are by and large not educational experts. And those who are educational experts are not communicators Creating a new community of education communicators or communicator-educationists has a high priority.

. . and improve hardware distribution

This brings us finally to the issue of adequate hardware support to software production and distribution As regards the distribution issue, the present distribution of television sets receiving the signal excludes the major part of rural India. The sets are concentrated in the metropolitan and urban areas. Within the metropolitan and urban areas, distribution pattern is skewed in favour of richer sections The central issue relates to access of rural and urban masses to television. So long as the predominance of urban

(Contd. on page 12)

The worsening lot of farm labourers

(A case study)

J. Ramdas Reddy

In this interesting study of the economic condition of the Andhra Pradesh agricultural labourers, the author observes that when all out efforts are being made to improve their lat, their condition is worsening because of shift from the permanent and yearly employment to the system of casual and daily wages. The medium of payment is also changing from grain to cash. This, he feels, has weakened the relations between employers and laboureres and created a class of agrarian proletariat along with the growth of commercial agriculture.

TO BRING ABOUT IMPROVEMENTS in the economic conditions of agricultural labourers and remove the social disabilities from which they have suffered in the past are among the major tasks of planned development. The two principal problems that are facing the planners are. the provision of work to the rural labourers and the place of agricultural labour in the future rural economy. Their problems consitute a challenge to the entire society and the obligation rests upon the community as a whole to fined satisfactory solutions for them.

Acute unemployment

In the context of the above national objectives the present study is intended to assess the economic conditions of agricultural labourers in Andhra Pradesh and review the employment and unemployment trends in the state. In Andhra Pradesh which is a comparatively backward state with a large degree of dependence on agriculture, the problem of unemployment and under-employment is acute. Further, in chronically drought affected areas of Rayalaseema and the backward Telangana region wherein substantial tracts, subsistence agriculture is practised the problem of unemployment and underemployment is particularly acute. The National Sample Surveys in India will show the dimensions of the problem of unemployment in rural areas. It may be pointed out that the problem in the rural areas is one of under employment rather than absolute unemployment According to the 27th round of N.S.S. data in 1972-73, out of 173.53 lakhs of rural labour force in Andhra Pradesh 13.34 lakhs on an average were not having employment on any single day in a year. They constitute about 7.7 per cent of the rural labour force. This is the measure of the extent of underemployment in the rural areas. The estimated figure of unemployment during 1984-85 would be 18.01 lakh per day on an average.

By the same round (27th) of N.S.S. data, it was found out that 1.58 lakh of the total labour force (173.53 lakhs) in the rural areas of Andhra Pradesh are chronically unemployed. On this basis at the end of 1984-85, there would be about 2.07 lakh persons subject to chronic unemployment in the state. Chronic unemployment refers to those who are not employed even for a single day in the year based on the usual economic activity status.

It is interesting to note that the proportion of cultivators to the total workers in the state has increased from 35.1 per cent in 1951 to 40.1 per cent in 1961

and again fell to 32.2 per cent in 1971 and marginally increase in 1981 by 0.42 per cent and the proportion of agricultural labourers moved directly in the opposite direction over the decades compensating the change in the proportion of cultivations. Composition of workers in Andhra Pradesh can be seen from the following table.

Table No. 1

Composition of workers in Andhra Pradesh (in lakhs)

Category of workers	1951	1961	1971	1981
a. Cultivators	40.49 (35.10)	74.87 (40 11)	57.95 (32.18)	73.71 (32.60)
b. Agricultural labourers	38.50 (33 84)	53.36 (28 59)	68.29 (37 92)	82.92 (36 68)
C. Total agricultural workers	78.99 (67.94)	128.23 (68.70)	126 24 (70 10)	156.63 (69.28)
d. Non-agricultural workers	36 35 (31.06)	58.40 (31.30)	53.83 (29.90)	69.44 (30.72)
e. Total workers	115 34 (100)	186.63 (100)	180.07 (100)	226 07 (100)

SOURCE: a. Statistical Abstract of Andra Pradesh, 1972.
b. Census of India 1981 Series 1, India Paper 3 of 1981 "Workers and Non-Workers".

NOTE. Figures in parentheses indicate percentages to total workers.

In the above table, percentages both in respect of cultivators as well as agricultural labourers from 1951 to 1971 census might be a real one, but the changes from 1961 census to 1971 census might be due to changes in census definitions and concepts. In any case, the percentage of total cultivators and agricultural labourers put together remains more or less constant as there is no diversification in the occupations of workers from agriculture to other sectors of the economy in the state. The proportion of agricultural labourers (36.68) to the total workers is very high as compared to all India (25.16) in 1981 indicating larger proportion of workers depending on agriculture in Andhra Pradesh as compared to all India. Regional disparities are reflected in the pace and level of the economic development of the state while coastal Andhra presents an advanced stage of economic development, the other two regions—Telangana and Rayalaseema have remained backward.

Decline in real-wages

A note of the Ministry of Labour and Employment in 1972 stated that agricultural labourers draw mostly from scheduled castes and scheduled tribes and the bulk of landless agricultural labourers come from these disadvantaged groups. It was found that money wages have risen but the real wages have declined in the majority of the districts of Andhra Pradesh except in a few areas like Chittoor and other districts. Further, an analysis of increase in output and wages reveals that fruits of technological breakthrough are not distributed to the agricultural labourers and their position has not improved. The percentage of agricultural labourers to the total workers (36.7 per cent) in Andhra Pradesh is highest among all the states in India.

Factors influencing employment

In this state, employment of agricultural labour is influenced by several factors like the size of land, family labour available for the cultivation, crop pattern, supply of labour, the operational needs, sources of irrigation, sex and age structure of labour, the level of irrigation, the level of mechanisation etc. The influence of caste on employment and wages is very negilible. Normally hiring cultivators contract the labourer in the evening for the next day's work. In seasonal rush of operations, some temptations will be made to attract the labourers. Customory casual labourers are noticed in the villages. They are casual labourers but they are attached to some cultivators. As a result, they are given some perquisites like vegetables, grass stalls, cigars, meals, hair oil etc. They are also provided with one or two meal a day depending upon the nature of operation. Annual labourers are given meal for the entire day. Customery casual labourers and annual labourers are given some gifts during festivals and harvest. A piece of rent-free land is provided to annual labourers as an incentive also. In case of contract work, agricultural labourers get more wages and is expected to work for longer hours. Normally, working hours vary from 6 to 8 hours a day depending on the nature of work There are wage differences between regions and crops and as well as between male and female labour and even from one kind of operation to another kind of operation. Wages are paid in cash or in kind or in both the forms. The low wages prevailing in the village may be due to landlessness of labourers, low land holdings of cultivators, low migration, traditional customs and relations, ignorance of welfare legislations, lack of organisation etc.

preference for wages in kind

Upward trend in the prices of foodgrains often pushed up the proportion of the total wages paid in

(*Contd. on page* 25)

Declining working population of Bihar

Dr. Krishna Mohan Prasad

The author here analyses the percentage variation of working and non-working population of Bihar. Its working population is proportionately less than the country's average. As against an increase of population by 24.6 per cent during 1971-81 in the State there has been a decrease in working population by 6.4 per cent and increase in non-working population by 40.8 per cent. This, he says, is due to inadequate industrialisation resulting in a large number of unemployed, semi-employed and disguised employed persons in the State.

BIHAR HAS AN AREA of 173,877 sq. kms. Almost half of the total area of the State consists of hills and plateaus while the remaining half is an alluvial plain divided into two unequal part, north and south, by the river Ganga.

North Bihar is an extremely fertile strip of land, being watered by the Saryu, the Gandak and the Ganga. Southern Bihar, specially in and around the districts of Chotanagpur and Santhal Pargana, is thickly wooded and consists of a chain of hills.

Bihar is the second most populous state of the country. As per the 1981 Census, its population stood at 69,914,734 which constituted 10.2 per cent of the country's total population.

Lower working population

The population of Bihar is predominantly rural because about 90 percent of the population resides in the rural areas. The population of the state is characterised by a very high percentage of dependency because in 1981 there were 20.71 million workers of various categories in the state which works out to about 30 percent of the total population and non-workers comprised the remaining 70 percent of the total population where---as in the country as a whole, the proportion of workers was 33.44 percent. In different regions of the State, the percentage of working population varies sharp. In north Bihar plain, workers constitute 28.03 percent of the total population and in south Bihar plain and Chotanagpur plateau regions, the percentages are 29.25 and 30.59 respectively. This clearly indicates somewhat heavier burden of dependency on agriculture in the state which is mostly found in the rural areas.

The proportion of workers in the rural areas of Bihar is 30.23 percent and in the urban areas it is 25 65 percent. As between males and females, the proportion of workers is 49 08 percent and 9 16 percent respectively taking both rural and urban areas together.

According to 1981 census, out of the total workers in the State 43.30 percent are cultivators and 35.44 percent agricultural labourers as against the respective percentages in India being 43.52 and 27.16 percent which indicates increasing number of agricultural labourers who need additional avenues of employment. In other words, about 82 percent of the total workers are dependent upon agriculture in the state as against about 70 percent in the country as a whole Only 17.78 percent of the working population is engaged in other occupations as against 29.32 percent in the country as a whole and out of this only 3 01 percent is engaged in the household industries. The proportion of agricultural workers to total workers varies region-wise also.

Low rural industrialisation

The proportion of agricultural workers to total workers is 85.60 percent in north Bihar plain region, 79.42 percent in south Bihar plain and 66 percent in the Chotanagpur plateau region. This shows, in other words, that the proportion of agricultural workers to total workers is highest in the north Bihar plain and it exceeds even the state average.

Thus, in Bihar, only about 30 percent of the population is the working population which shows greater burden of dependency and out of the total workers, 79.21 percent workers are engaged in agricultural occupation. Out of the other workers, only 3.01 percent are in household industries which indicates low rural industrialization in the state.

During 1951-61, 82.2 percent of the working population was engaged in agriculture out of which 43 3 percent were cultivators and 38.9 percent were agricultural labourers. The percentage coverage of workers in mining, household industries, trade and commerce and transport were 3 39, 5 50, 2.72 and 1.20 percent respectively. In 1961-71 the percentage of different categories of workers was 41.4 out of which agricultural workers consisted of 82 2 percent, mining etc 2 5 percent, household industry 2 5 percent, manufacturing 2.6 percent, trade and commerce 3.2 percent and transport and communication 1 5 percent respectively. In 1971-81, the percentage of agricultural workers is 79.07 followed by 2 40 percent in mining etc., 2 38 percent in household industries, 3.10 percent in manufacturing. 5.06 percent in trade and commerce and 2.3 percent in transport and communication.

Thus, the state has primarily and agricultural economy The state unemployment committee has estimated that about 4 7 million workers, presently employed in agriculture. are redundent.

In spite of the efforts made under plans the unemployment condition in this state is increasing gradually. The population of this state increased by 21.3 percent between 1961 and 1971 and by 24 6 percent between 1971-81 But the working population decreased by 6 4 percent and non-working population increased by 40 8 percent The non-workers as a percentage of the total population went up from 68 1 in 1970-71 to 69 4 in 1980-81

Table no 1 reveals the fact that percentage increment of agricultural labourers, other workers and non-workers is high in comparison to 1971. Such is the condition of a state like Bihar which is called the 'Rurh of India'. Due to inadequate industrialization, there is a large number of unemployed, semi-employed and disguised employed persons in this state. ☐

(*Contd. from page 8*)

elite and privileged groups among the viewers of television programmes persists, it will continue to determine the character of these programmes, making them consumerist and titillating.

Educational television for rural children requires a deliberate policy of providing to the rural masses access to television. This can be done only by installation of community viewing sets in rural areas in community centres and/or in village schools Equally importants is the efficient maintenance of television sets by public agencies. Without solving the question of access, a qualitative change cannot be brought about in the composition of viewers in favour of rural areas. And without changing the composition of viewers, a qualitative change cannot be brought about in software in favour of educational programmes for rural children.

conclusion

At the end, it needs to be stressed that educational television for children, for rural children, is a new concept which needs to be nursed and protected from the overgrowth of consumerism-and-titillation- -oriented software in the same manner as young seedlings and plants have to be nursed and protected from the overgrowth of poisonous weeds. ☐

Table No 1

Size and Percentage variation of working population by agricultural and other workers in Bihar in 1971—81

Categories	Total workers 1981 - 1971	Percentage increase or decrease in the different categories of the population of Bihar in 1981 compared with 1971
State's total workers	2 ,753,128 . 1,80,03000	
Cultivators	9,042,085 · 7,579,698	' 19 2
Agricultural Labourers	7,366,973 . 6,806,103	+ 8 2
Other workers	3,848,946 30 ,3078	+20 7
Non-workers	47,297,64 : 38,864,490	+20 2

Source : — 1 Census of India, Bihar 1971, 1981, Series - 4
2 Bihar Statistical Hand Book 1978, pp 11-13
3 Bihar Through Figures, 1977, p 44

Delegation of powers for rural development

Amitabh Mukhopadhyay

Directive Principles of the Constitution enjoin on the Government and the cadre-based political parties the task of rural development. But, according to the author, rural development has been sought to be implemented by administrative orders and sanctions from the Union/State Government to the district authorities and agencies. Thus, local bodies have been functioning simply as agents of state governments in this sphere. The author says it is imperative now to enact a law for delegating powers of independent judgement on the local officials regarding rural development and of judicial review on the local bodies. This, he feels, will secure greater credibility for the state machinery and enlist participation of political parties.

THE MORAL WEIGHT OF the national movement required that after independence the aspirations of the peasantry to better conditions of life be realized. The abolition of intermediaries along with drastic reductions in land revenue rates were a measure of the political sagacity of the independent government. Reliance on the twin institutions of government as well as competing political parties for rural development was the premise on which the directive principles of state policy were based. Coherence of the different elements of the directive principles, (for instance, meaningfully relating a centralized system of finance and planning to local self-government) depended on cadre-based political parties engaged in mass activities of the rural folk and articulating their interests. This hope and trust reposed in political parties has been belied.

As a consequence, rural development was foisted on to the machinery of state in the district as a major task which replaced, over the years, revenue administration as the preoccupation of the government. Revenue administration was conducted by means of a *statutory* delegation of powers, supplemented by administrative orders. Incipient efforts during British Rule at rural development were likewise based on statutory delegation of powers to *parallel* organs of local self-government. Since independence, however, rural development has sought to be implemented by administrative orders and sanctions from the union and state secretariats to the district collectors and district rural development agencies. Local bodies have functioned not as parallel to, but as agents of state governments.

In the first section of this paper we dwell briefly on the nature of the shift from a policy fostering parallel organs of local self-government to a policy of converting them into agents of the state governments. In the second section, we draw the implications of resorting to a sole reliance on government as the agent of development for the mode of delegation of powers as well as its consequences. We argue that while streamlining paper management at the secretariat level may be an adequate area of administrative reforms, for the district machinery we have to probe the structural, i.e. institutional aspects and therefore requite stautory rather than an administrative delegation of powers to Collectors and functionaries reporting to him. Next, we distinguish between enforcement of existing laws and making services and funds available for nurturing economic activities

as distinct foci of rural development. It is urged that along with statutory delegation of powers to state officials, appeals and petitions for enforcement of existing laws be brought under the jurisdiction of local bodies and be made their primary focus. Establishment costs of these local judicial bodies be met by the state governments For economic activities, the same local bodies may be enlisted only for those programmes and schemes that they can raise funds for locally to the extent of one-fourth of the total requirements. Threefourths be met by the Central Government on a matching grant basis and only after meeting these commitments should larger projects of the Central Government involving two or more districts be launched. Officials posted in the district be entrusted with execution. They may render accounts to the local bodies. In the concluding section, certain suggestions for rendering local bodies politically viable to engage in these activities in the context of demands for social change are presented. It is argued that only elected members should constitute these bodies and elections should be on the basis of the proportional representation principle.

Local bodies trends

Phase I

When the Raj was established, Great Britain was informed by a liberal political philosophy of pluralism where stoppers to totalitariansim were provided by the community expressing itself through the institution of the Church which the State had to reckon with. The counterpart for the organized Church was located by British civil servants in the village communities represented by the institution of panchayats. For the State to gain power and establish law and order, the judicial role of panchayats was gradually usurped by district courts enforcing British enactments. This was done not by abolishing panchayats but by gradually extending regulatory controls on them. The entire edifice of the district collectorates were established as a result of this judicial requirement for attaining legitimacy for rule. This judicial thrust meshed well with the function of collecting revenue based on legal settlements. An intricate system of procedures grew around it to secure for the collectorates both insulation from the populace as also authority over it.

Phase II

The need to relieve the burden on the imperial finances by levying local rates and taxes prompted Lord Mayo to move a resolution culminating in the Local Funds Act, 1871. It envisaged that local interest and supervision could be brought to bear on the management of funds devoted to sanitation, public works and education for the masses. The government would provide only grants-in-aid. Lord Rippon's resolution in 1882 increased the scope of revenues and functions of these bodies.

Phase III

The momentum being gathered by the national movement precipitated the Montague-Chelmsford Reforms and the Government of India Act of 1919 provided for the least possible outside control "so that the educative principle was not subordinated to *the desire for immediate results.*" Local self-govrenment became a provincial and transferred subject under an Indian Minister.

Phase IV

Between national independence and adoption of the new Constitution in 1950, major departures from the British pattern were made. As an instance, we may take the Central Provinces and Berar Municipalities (Amendment) Act, 1947. Four departures were initiated by this act. (a) the centre of gravity of administration was shifted from the district to the tehsil level by abolishing district and local boards and creating janapada sabhas in their place whose area was coextensive with the old tehsils; (b) local and state administration were integrated by making the district magistrate the chief executive of the Janapada, (c) schemes were to be executed wholly by the officers of the state govt posted in the area, and (d) distinguishing between policy making and policy execution, the former functions were entrusted to the elected sabhas and the latter to nominated civil servants. (These changes we may note were the lines along which panchayati raj further developed again in the sixties as a result of the Mehta Committee report with the only essential difference that the *blocks* as units were created for the institution of panchayat samities) Since the new Constitution merely provided for village self-government and, while distributing powers between the union and states, did not further distribute them between a state and local bodies, they lost their independent status.

Phase V

When the Union Government conceived of community development under the First Five Year Plan, rural extension as an agency by itself was inadequate to enlist people's participation. The Planning Commission constituted the Balwant Ray Mehta Committee in 1957 which examined how popular organizations at the village levels could be associated with state level administration. Its recommendations for a three-tier system (gram, samiti and zilla levels), provision of adequate resources for enhanced responsibilities of development programmes entrusted to them are familiar enough. The Committee conceived of the panchayats and panchayat samities as executive bodies and the zila parishad as coordinating and supervisory body with the collector as the chairman. Differences between legislations in various states have made for the emergence of three models of panchayati raj viewed in terms of the role of the collector (as the agent of state government)—Tamilnadu where he enjoys overriding powers to Andhra affording fewer

powers and on to Maharashtra where he is kept out of the zilla parishad altogether

Phase VI

With mounting opposition in the Lok Sabha to the commmunity development programmes in the mid-sixties came the cut in the financial resources of the panchayati raj institutions with exceptions in Gujarat, Maharashtra and Tamilnadu. They have languished ever since, with resources far too meagre for the functions and responsibilities assigned to them and elections to them delayed by a decade and more. The Janata Government appointed the Ashoka Mehta Committee in Dec, 1977. Noting that striking economic changes had occurred in rural India since the report of 1957, this committee pleaded that "state governments should realize the social costs of administering expanding development programmes from a distance on through only governmental machinery." Its recommendations are listed in the appendix to its Report for reference. While being very bold in its assertions, unfortunately it falls into the strait-jacket and verbiage characteristic of those who take an earlier report on the same subject as their point of departure The stalemate between state governments and panchayat bodies perists over twenty long years Despite protestations of planners to humility and to decentralized planning, programmes for rural development are being muster-rolled into oblivion.

Modes of delegation

In the context of rural development, complaints against the district machinery of state governments revolve around two basic issues —first, that they are too procedure ridden and leave no scope for deviations in the light of local needs, and second, that they are far too amenable to political influences and corruption Appeals are frustrated by the remoteness of authorities to whom these have to be addressed

No amount of soul-searching can remedy the situation because these are direct consequences of the mode of delegation of powers Under a system of administrative delegations, each functionary down the line. is empowered to do things subject to the procedural requirements being met. The broader intentions of the govt. are lost in the quagmire of procedures and the functionary relapses into satisfying himself about these requirements Even targets naturally take on a statistical meaning and lose all substantive content Accountability is to superiors in the hierarchy who are at one remove. Appeals against any decisions, similarly, lies with their immediate superiors. While on the one hand only procedural propriety matters, lapses when they come to light or are deliberately indulged in, are soft-pedalled.

Statutory delegation, on the other hand, requires that specific powers delegated by the Act itself to specific functionaries be exercised by arriving at a judgement after considering the intentions of the legislation, the facts of the case and procedural requirements. Both the accountability of the functionary as well as appeals against his decisions lie with a corresponding judicial body located at the very level that decisions are taken at. While superior officers do exercise regulatory powers over a functionary, the relationship between them becomes one of reciprocal interdependence under statutory delegation rather than a one-way traffic of obligations that lead to oligarchies as at present.

Today, it is the rare district collector or additional collector that has the persistence to take up cases on their merits and seek sanctions from the Secretariat. Since most affairs relating to rural development involve finances, the administrative ministry at the secretariat has invariably to refer matters to the finance department where a clerk conversant with procedures alone processes the case. The independent judgement of an officer on the spot is sacrificed at the alter of a rule-knowing clerk. If we do not, in principle trust the faculty of judgement of functionaries at appropriate levels, why bemoan procedures when they rule the roost ?

Even on constitutional grounds it can be argued that the legitimacy of delegation of powers by an act of the legislature itself is far greater than that of delegation based on administratives orders which are only acts of the ruling government. Therefore, a government ruling primarily with statutory delegations supplemented by administrative orders is healthier than one operating vice-versa.

A legislation delegating specific powers to specific level of functionaries is clearly in order if programmes for rural development (which involve not only a scheme of implementation but also decisions on individual cases) are to involve the human faculty of judgement at all levels of decision taking. With such a reform of the implementing apparatus, the state machinery at the district level and below it can be entrusted by local bodies and the government as their sole agency of implementation. For such a statute we require judicial bodies at corresponding levels to attend to accountability and appeals.

Social justice

The entire literature on development grew up around a core of concern for economic growth after the second world war. Economists dominated the thinking of planners and the war against material deprivation termed 'poverty' assumed a pre-eminent status as a national goal. 'Social justice' naturally acquired the connotation of being restricted to redistributional measures vis-a-vis material resources. In fact, when redistributional measures regarding land ownership came up for judicial review, a debate ensued re-

garding the question as to whether primacy was to be accorded to the directive principles or the fundamental rights in the Constitution. It is beyond the scope of this paper to comment on the merits of protagonists for either side. What does merit attention here is the recognition of redistributional measures as essentially a point of dispute between different sections of the population. Disputes between any section of the population and government, on the other hand, are excluded if the notion of social justice is restricted to redistributional matters. The populist stance of the government has allowed it to ride rough shod over the interests of one section of the population in the name of the other while deciding on disputes between the two sections. However, government has failed to realize that having decided in favour of the weaker sections, a lack of will to carry out the redistribution materially has precipitated disputes between the weaker sections and the government. In the context of the changed parties to the dispute after the issue of redistribuion has been settled by policy, social justice must naturally connote socially administered justice.

The notion of enlisting people's participation in the judicial wing of government has seen the light of day in the shape of separate nyaya panchayats dealing with petty disputes of a local nature. We are not arguing for such bodies and processes. It must be borne in mind that parties to the dispute identified for nyaya panchayats are not the same as those identified in this paper. The disputes between different citizens are to be decided by the judicial wing of government. Disputes between citizens and the government functionaries implementing rural development programmes and enforcing social laws must be decided by local judicial bodies.

Local bodies at all levels must first and foremost be judicial bodies for enforcement of social laws and hearing appeals against state functionaries acting under a statutory delegation of powers for rural development. The number of tiers of such bodies required upto the district level would necessarily be based on the number of tiers of state functionaries. Beyond the district level further appeal by either parties should be decided by the High Courts and the expenditure for their establishment must be a charged one in the budget of the state governments

Over and above this basic function, local bodies may be involved in economic and welfare activities. They may formulate projects, schemes and plans to the extent that they can raise resources for at least one—fourth of the total costs of the project (one-sixth for backward regions). The other three-fourths may be provided by the Central Government on a matching grant basis. Only after meeting these commitments should the Planning Commission allot residuary amounts allocated for rural development in the plans to State Govts. for programmes involving planning over two or more districts. Both the collections by the local bodies and the matching grants may be given to the state officials as sole agents for implementation accountable to the local bodies for their moneys and to the State or Central Governments for their shares. Empowered by the statute earlier urged for giving them greater room for using their judgement, state officials may implement plans independently Appeals against their decisions would lie with the judicial local bodies at corresponding levels and not with their bosses except where their conduct or regulatory matters arise.

At present, the finances at the disposal of local bodies are far too meagre for them to discharge their functions. This is due to their own hesitation to levy and collect taxes in the fear of becoming unpopular. Dependent solely on grants-in-aid from state governments, they naturally squander resources for even in the preception of the poorest villages, govt. funds are nobody's money. If linked up by matching grants, local collections would rise and the entire population would look on the total funds as their own resources Local supervision and vigilance can be expected to grow only if the system of matching grants is introduced. The plans involving their own collections as part of the funds must necessarily be their plans, not dictated by the central or state government agencies.

Proportional representation

We have said that local bodies were essentially judicial in nature prior to British rule. This function was taken over by the machinery of British rule at the district level and combined with revenue collection based on settlements. When these bodies were again legislated into life, their character was transformed. They were redesigned to gather local funds and enlist mass involvement in programmes for economic and welfare measures of the government. Since most of these were redistributional in intention, the agency for change had to be the government functionaries alone. Local bodies could only be expected to be dominated by the very local interests that the govt pledged itself to dislodge.

We have noted that to steer away from the paramountcy of procedures and introduce a fair system of implementing programmes, devolution of specific powers to specific functionaries by means of legislation is crucial. A natural corollary is the creation of local bodies for judicial review. This would be sustained also from the point of view of dispensing justice socially in so far as enforcement of social laws and the benefits of rural development are concerned

In order that these local bodies become politically viable, it is of the greatest importance that, first of all, both ex-officio and coopted members be dispensed within constituting the bodies. These institutions

(Contd on page 19)

MODVAT, an experiment long overdue

Dr. A. N. Dutta

MODVAT has been given a decent experimentation on a nationwide basis. The basic intention under the scheme is to shift excise gradually from inputs to final products. The author here feels as major chunk of tax revenue comes from large concerns, there is minimum possibility of tax evasion. Another gain of this system, says the author, is that it will improve quality of our products and encourage competition among the Indian industry.

VAT IS A TAX ON THE VALUE ADDED to a commodity of service. It is a multi-stage turnover tax which is levied every time when the commodity changes hands on the price at which the transaction takes place. VAT is assessed only on the incremental revenue (value) added at the successive stages and it equals the tax which would be payable if it were charged only once on the final value of product. As an accounting base, the contribution principle locates the value added element through the contribution at each stage of production in adding a definite value which will have a both qualitative and quantitative content in that the extra utility gained therefrom will materially determine the quality and magnitude of the Gross National Product (GNP), both stagewise and sectorwise. Finally, such an analytical insight will not only enrich the decision making process but open new vistas for experiment in fiscal growth. VAT is levied every time when the commodity is transacted, even if the transaction takes place in the process of production. The total amount of tax on commodities which change more hands in the production process is higher than that on commodities which change fewer hands. VAT is said to be a comprehensive, single point, uniform rate tax. It is claimed that, it does not distort relative commodity prices provided it is levied without any exemption and zero-rating. Under VAT system major chunk of tax revenue comes from large concerns, so there are minimum possibilities for tax evasion. The concept of MODVAT was first broached as a working idea in the Long-term Fiscal Policy as 'The universal credit of duty paid on input" with the basic idea of providing set-offs for taxation of inputs in replacement of the present system of domestic indirect taxes. Various criticisms have been labelled against this idea, mostly centering on the immediate application of a scheme which has been little understood by many.

VAT, its origin

However, the value added tax VAT concept, theoretically speaking, had its origin in this country first in Kaldor Committee's recommendation and then in Dutta Committee and the Jha Committee's recommendations. There it was conceived as an important fiscal device to neutralise the cascading inflationary impact which follows from a stiffening of indirect taxes. It was argued that a VAT would serve both maximising the revenue collection and rationalising the fiscal structure insofar as the manufacturing sector was concerned. The central idea of resource utilisation through an optimum principle was not emphasised. After years of research and experimentation in the more advanced countries, especially the U.K. and some commonwealth countries, a distinct theoretical format has evolved. The focus, apart from ensuring a strict control on revenue, is now on radically improving the performance, particularly through technical innovations, to reduce the number of steps involved in manufacturing a product and thus making a far better use of resources.

Value measurement

In a business unit, profit maximisation becomes the central objective. This works out through the processing of products but ignores conversion wastage of valuable inputs (loss of valuable national resources) and very often, this is concealed and the burden passed on to the *consumers* through formulating mark-up pricing policies. This not only taxes the consumer against no extra gain, on the other hand it boosts inefficiency in production. Thus the more important concept becomes the socio-economic consideration which measures two things . (i) whether there is any loss in national resources and (ii) whether and how much value-added truly enhance national welfare. Thus in this regard, value-added truly constitutes additional utility creation and a fair matrix can be drawn up with such measurements as the additional production of output, additional consumption of inputs, additional creation of wealth, additional creation of social surplus and its adequate distribution according to the socio-economic norms in a country as a particular time.

Productivity and cost control

An important area of value added analysis has been stepping up productivity when the existing or better outputs are produced with a reduction in the resources consumed. Such an experiment should go on continuously till an ideal combination is obtained in matching the inputs for producing the optimum output and any such change will always be reflected in the level of added value. In its turn, this added value provides an excellent means of measuring productivity and then ranking alternative uses of resources in the order of the added value that could be created To ensure that the added value keeps on always increasing, an appropriate system of accounting has to be introduced to measure (i) an increase in the value of outputs, (ii) a reduction in the materials and services used up in the process and (iii) a combination of both. This will also, inter alia, provide us a simple clue as to the use of typical inputs in the process to determine whether a particular input has to be used excessively or another input has to be used in a lesser measure so that the switching of activity can be easily understood before hand.

In practice, however, switching of resources becomes a difficult job because of the lack of similarity of the alternatives available. In that case, however, it is better to focus our attention on the return concept viz., return on assets which is fully dependant on the similar nature of the review. In whichever way this is viewed, the ratio of contribution to added value remains one of fundamental importance inasmuch as the waste area can be easily located and efforts are made to reduce it through effective control

Different functions in a manufacturing operation have a functional impact on the cost|design of a product. The first aim of value analysis exercise is to bring together all these diverse functions with its own objective to produce a structure calculated to improved profitability. This effective technique is a very useful approach and with a product life span of about 5 years it is quite a realistic assumption that there will be substantial changes in relative material prices, types of equipment available etc. This multi-stage exercise which equally corresponds to any change in fiscal policies affecting the operational cost requires constant review at every stage so as to establish a cost price parity at optimum level.

Another important area is control where contribution accounting provides an effective clue. The following elements are such basic considerations :

(i) costs are charged only to those activities which can be measured;

(ii) control ratios related to contribution to added value can be calculated and similarly, service and control costs to contribution measured;

(iii) as observed earlier, strategies on how to have best alternative use of resources can be made more operative by using contribution principle,

(iv) standard costs and benefits are easier to formulate and design through this method; and

(v) goal oriented objectives are clearly set up before the management by using this contribution analysis.

In regard to measuring the success of control, the ratio of contribution to added value becomes one of supreme importance In practice, the level of productivity can be determined by calculating that portion of added value left after (residual) payment has to be made for the skill that created the added value, in this case, direct labour. This is the contribution ratio because productivity is the measure of value created as a proportion of the effort expended. Secondly, another ratio which has earlier been referred to is that of service and control costs to contribution. This ratio can be calculated by dividing the service and control costs by the contribution made which shows the proportion consumed by those costs.

The MODVAT approach

In the recently announced modified value added approach, a number of steps have been designed not only to optimise the excise revenue by increasing a number of steps involved in the process but also indirectly helping an intensive use of resource implied therein. The core of controversy rests on whether such a tax on the value added at every stage would be neutral in resource use or not. Supporters or opponents against this view are not lacking in number because it all depends from which way this tax is viewed A populist view that costs of production may

go up as a result of this tax does not seem to have an empirical base once it is understood that the tax would be compensated on the other hand by duties reimboursable at every stage but because of the compelling logic to rationalise the number of steps involved in production, resources would be more optimally used and wastages immediately reduced on the face of it. In fact, time has now come for the whole corporate sector including the government to examine quantitatively how far the contribution principle as discussed in the first part of this article can be effectively applied in economising the production process, reducing unnecessary costs and maximising the returns from the inputs employed in the particular line of activity.

Shifting the burden

The MDDVOT scheme has been introduced for all goods covered by 37 specified chatpers of the Central Excise Tariff Act 1985. This would cover a number of industrial products and the basic condition for entitlement of proforma credit is that such inputs and the final products should be covered by the specified 37 chapters and that the final product bears some duties of excise. The proforma credit covers both excise duty and countervailing (additional customs) duty and in essence, the rising duty on inputs is supposed to be replaced by the higher excise taxation of final product. Thus, the very objective of the scheme is found in shifting the effective burden of excise taxation from inputs on to final products through steady reimbursement at each stage Such reimbursement would be obtained instantly of the duty paid on both components and raw materials. Essentially, the scheme covers 37 chapters and crude oil it is intended to cover on other items before the end of this year and the proforma scheme, which is an interim measure by and large, would be abolished altogether.

The government have in the meanwhile laid clarifications that the credit of specified duties paid on the inputs can be taken for the products with production of duty paying documents as specified in different cases. Extensive illustrations have been provided through different conferences, workshops and seminars and it is hoped that without running the risk of any over simplification, the scheme will be properly appraised by all concerned through a close continuing dialogue with the Tax Authorities It has been further notified that Rule 57 F has been amended for a prompt removal of inputs either as such or after partial processing to a place outside the factory for manufacture of intermediate products with the approval of the excise authority. The intermediate products along with the waste, if any, arising in the course of their manufacture shall be returned to the factory. The duty liability, if any, arising with any reference to the intermediate products wastes would have to be discharged at the time of clearance of intermediate products from the place of its manufacture and if any duty has been paid on the intermediate products the same will be allowed as credit under Rule 57A. For the purpose of regulating the movement under MODVAT Rule the procedure as under Rule 56 B will be applicable.

Thus MODVAT scheme has now been given a decent experimentation on a nation wide basis. The Jha Committee had come in full favour of the introduction of such an important scheme, atleast as a pilot scheme so that its workability may be established for all to see. Hence, without disturbing the existing federal set up of our country Excise Duty can be replaced by a VAT. The basic intention of this new tax is to relieve inputs from excise and countervailing duties and the LTEP statement had indicated that MODVAT could be revenue neutral and implemented in a phased manner to shift excise gradually from inputs to final products. Apart from all the valuable impact that an operating exercise of the MODVAT will create, another important gain will be to ensure that the quality of our products goes high and a sharp edge to the competitiveness of Indian industry is assured through the deduction of the 'cascading' effects of taxation at several stages of manufacture. It is hoped that the corporate business sector will fix their perspectives at the right base on this new experimental device with all objectiveness so that the benefit could accrue both to industry as a cost saver and the government as a revenue raiser by streamlining the intermediate stages of operation in manufacture and turnover. □

(*Contd. from page* 16)

should be purely elected bodies. Secondly, proportional representation with the list system should be adopted A panchayat area can be considered a 15—member constituency. Every section of the population covered could reasonably expect to return one member to the body. Political parties could then be afforded a chance to complete and gain or lose support depending on performance rather than mere promises. By itself this would be the realization of a dream as stated at the outset of this paper.

Conclusion

A legislation confirming powers of independent judgment to all levels of officials and those of judicial review to corresponding local bodies is an imperative for rural development. Local bodies can be geared up for this role as well as that of collecting resources for local plans if they are constituted of members elected on the proportional principle. In substance, such a legislation can secure greater credibility for the state machinery as well as lead to the emregence of cadre-based political parties competing through mass participation to further the objectives of the Constitution. Both volunary agencies as well as social audit could be harnessed towards assisting such a development.

Siting industries sans hazards

Dinesh Chand

Industrialisation is the mainstay of developing economies. However, it brings in its wake problems of pollution and environmental hazards. So, selection of suitable sites for setting up industries becomes crucial as wrong selection may prove catastrophic. Here the author suggests certain guidelines for selecting industrial sites to ensure that industrialisation proceeds without endangering the environ.

INDUSTRIAL SITE development is an important aspect for the developing countries from economic as well as environment points of view. Ignorance of proper site selection has cost the deterioration of the environment and sometimes the lives of living beings. Industrialisation is the backbone for development of the Third World countries. Unfortunately, industrialisation is directly proportional to the generation of pollution and impact on the environment thereof. The pollution may be of water, air, soil or noise. Thus, the industrialisation can affect the environment upto the extent of non-survival of living beings. Therefore, the site selection is an important factor for industrial site development.

The Bhopal tragedy, which cost the lives of over 2500 people, and thousands of other badly affected is an example of the most gruesome and shameful calamity perpetrated in the last 300 years of technological civilization which compels us to think over setting up industries in near future. Now, the question arises what are those factors which should be considered before setting up industries or an industrial area.

Everyone knows that industrial development does not come up alone, most of the environmental problems are associated with it and can only be minimised by their careful siting. The geographical distribution of industries in a country is determined by a great complexity of considerations namely, historical, economic, natural and psychological

The choice of site is, therefore, the result of weighing and assessing the relative significance of these factors. The consequences of selecting a wrong site can be catastrophic. Location of an industry at any place generally affects all the environmental components like air, water, land, flora and fauna, human settlements, etc.

Many other factors, of course, are important in selecting the site : numbers and type of labour available, union activities in the area, attitude of people, transportation facilities, availability of electricity and fuels, taxes, climatic conditions, supply of raw materials, distance of the market, space available, future prospects, available recreation and educational facilities, etc.

However, the entrepreneur, who may not be fully aware of the adverse effects of wrong selection of site may evaluate all the factors keeping in view the environmental and economical aspects before finalising the site of an industry.

Current practice

The Industrial Policy Statement of July 1980, emphasised the need for preservation of ecological balance and improvement of the living conditions in urban centres of the country. Under this policy steps have already been taken to prevent the growth of industry in most of the metropolitan cities and big towns. However, this policy has not touched the implications of siting of an industry in sensitive areas both ecologically or otherwise which would have an

effect on the overall development process. At present, the industries are being located on the basis of raw materials availability, easy access to market, convenient mode of transport and other usual socio-economic and technological considerations. The present industrial licensing procedure stipulates that entrepreneurs are required to obtain necessary clearance to run industry from the Central or State Pollution Control Board. The Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 stipulate that liquid effluent discharge and gaseous emission from industry should adhere to certain standards laid down by the Board. These stipulations do not prevent the industry from affecting the environment due to wrong siting. Also, combined effects of setting up of a variety of industries within a particular area are not being studied at all With the results that the industries or industrial area over a span of time may start affecting the surrounding environment as well as ecology.

Environmental guidelines

In order to minimise the adverse effects on the surrounding environment and damages to the ecology by siting an industry of industrial area the following environmental guidelines may be followed by the new entrepreneurs. These guidelines are in addition to the directives provided under The Industries (Development and Regulation) Act, 1951.

Classification

There are so many ways of classification. One of them is the basis of pollution in relation to the environment. With this reference there may be five possible classes of industries, namely : non-poulluting industries (NPI), Low polluting industries (LPI), Moderate polluting industries (MPI), Heavy polluting industries (HPI) and Hazardous industries (HZI).

The environmental guidelines are obviously more concerned in siting of a particular class of industries i.e., MPI, HPI, HZI than those industries which fall under the class of NPI or LPI. Some of the industries fall into two classes and their actual classification depends on their sizes and pollution potential.

On the other hand, the industrial site may be divided into three main regions on the basis of existing development trend, viz., Urban, Suburban and Rural.

Keeping in view the above descriptions, in the urban region, small scale and pollution free industries should be allowed to be set with strict restriction (i.e. only NPI). Similarly, in the suburban region, the industries classified as LPI, MPI should be allowed to be set with the adequate pollution measures but there is no risk of environment pollutional hazards, fire and explosion, etc. While viewing the development of the country, the industries lying in the classes of HPI and HZI should be allowed to be set in rural region and essentially equipped with complete well designed, failsafe safety measures against fire and explosion as well as environmental pollution control facilities aiming the clean lines of environment within the meanings of good living conditions. These industries must be located at significant distance from settlement(s) or in the isolated places with the above mentioned reservations. Therefore, the industrial process of the proposed industry should carefully be examined before classification and siting thereupon.

The classification of industries has been made by WHO. Keeping in view the development pattern of our country, the proposed classifications seem to be more suitable than WHO

Another method of considering types and locations of industrial installations in the urban environment has been described by Jucher, using four primary factors namely :

(i) Weight of materials to be transported per worker year.

(ii) Size of factory, including traffic area (m^2| worker).

(iii) number of workers in factory

(iv) distance over which the nuisances produced are greater than can be permitted.

Based on these four factors, industries are classified in ten classes specifying need of buffer zones.

Ecological considerations

During the development of industrial site one should emphasise to mitigate the adverse impacts of industries on the environment. Some of the natural|life sustaining systems and some specific land usages are more sensitive to industrial impacts because of nature and extent of fragility. With the view to protecting such areas, industrial sites should be selected on the following basis :

(a) Ecologically and|or otherwise sensitive areas recognised and notified by the Government; at least 25 km which may be increased depending on the Geo-climatic conditions, directed by the appropriate agency.

(b) Coastal area; at least 1|2 km from highest tide line.

(c) Flood plain of the riverine systems at least 1|2 km from the flood plain or modified flood plain affected by dam or flood control system in the up-stream.

(d) Transport|communication system, at least 1|2 km from highway and railway.

(e) Major settlements (over 3,00,000 population); at least 25 km from the projected growth boundary of the settlement. Special precautions should be taken to save the life of birds and their normal activities.

In addition of these directives, the following rules should be kept in mind :

(i) No forest land should be converted into non-forest activity for setting up of industry as per forest policy.

(ii) No prime agricultural land should be converted into industrial site.

(iii) Within the acquired site the industry should be located such that it may remain obscured from general sight.

(iv) Land acquired should be large enough to accommodate the appropriate pollution control facilities and a green belt of 1|2 km wide around the battery limit of the factory.

The treated liquid waste should be used for irrigating green belt. The industry having odour problem should maintain a green belt of 1 km wide or more than this around it.

(v) Layout and form of the industry that may come up should conform to landscape of the area without affecting the beauty of neighbourhood.

(vi) The associated township of the industry should be developed at a space having a physiographic barrier between them

(vii) The green belt of 1 km should be provided in between heavy polluting industries

Pollution considerations

Some of the aspects as described below are the main criteria for minimising the impact on the environment due to pollution caused by the industrial development The overall aim should be optimum use of natural and man-made resources in sustainable manner with minimal depletion, degradation or|and destruction of the environment.

Water Pollution

(a) Liquid waste disposal into water course :

(i) The liquid waste discharge from industry should adhere to certain standards laid down by the regulatory agency in this respect.

(ii) The efforts should be made to reuse|recycle water from conservation point of view.

(iii) Location of an industry should be so chosen that enough quantity of water may be available for industrial operation as well as for dilution in the water stream into which the disposal of liquid waste is consented by the regulatory agency, especially in dry wheather.

(iv) No industry should be located in upstream of the settlement to avoid pollution of water supply intake works and impounding water in the barrage|dam, if any.

(v) If the water stream is found unsuitable to bear an expected pollution load of liquid waste, the disposal on land should be encouraged after proper study.

(b) Liquid waste disposal on land :

(i) The liquid waste should be used for irrigation purpose after treatment.

(ii) The liquid waste should be discharged on land for percolation or into lagoon or impoundment for solar evaporation but only after proper study.

(iii) Properly lined deep well burial should be used for toxic liquid wastes. Precaution may be taken as re-surfacing and ground-water contamination may cause extensive damage to crops and livestocks.

Air Pollution

(a) Stack Emission :

(i) The emissions of all the pollutants should adhere to certain standards laid down by the regulatory agencies.

(ii) The adequate control equipments should be installed

(iii) Infrastructural facilities should be provided for the monitoring of emissions and ambient air quality. In this regard, each major industry should maintain at least three ambient air quality monitoring stations at 120 degree angle between two stations to check against additional contribution and adverse impact.

(iv) Proper stack height should be erected to disprese the pollutants so as to control ground level concentrations.

(v) Township should be built on upwind of the plant with 1 5 km green belt in addition to physiographical barrier or vice-versa.

(vi) Location of a plant should be avoided on upwind and in the vicinity of a mountain or in a valley.

(b) Process emission :

(i) In-plant control measures should be taken for expected fugitive emissions.

(ii) The provision for proper plant maintenance should be made to avoid leakage, etc.

(*Contd. on page* 30)

Bureaucratisation of Planning Commission

P. Ghosh Dastidar

The author, who retired recently from the Planning Commission after remaining with it continuously for three-and-a-half decades, narrates his varied experiences with the organisation. Initially designed to be a professional institution, different from other government departments, he says, "The Commission is now marked by an impersonal professionalism with a well-defined hierarchical structure earlier absent in it. Bon homie and camaraderie have been replaced by correct behaviour pattern between the boss and the subordinates. Planning Commission can now claim to be a true government department."

THE PLANNING COMMISION, set up in 1950 by a resolution of the Cabinet, was designed to be an institution for the fulfilment of the Directive Principles enshrined in our Constitution It was conceived to be an institution which would not only look after the short-term priority but probe deep into the socio-economic problems faced by the nation. Its tasks included thinking about the national goals, preparation of blue prints of the plans and programmes, gearing up the government machinery in implementing the programmes and evolving basic conditions for programme achievement The structure, the composition and quality of its membership and the very intimate association of the Prime Minister was desiged to give it a distinct identity *markedly different* from other government departments or ministries.

From early fifties planning and the Planning Commission as an institution have been an integral part of the Indian system though the earlier excitement in the experiment of planning, with the passage of time, has now given way to professional realism. Three decade and a half may not be too long a period in the history of a nation or an institution but it certainly is in the life of an individual. This scribe after completing an uneventful yet patient innings very low down in the batting order has just returned to the pavilion and has brought back many a happy and not-so-happy memory which he would like to recollect aloud The intention is not to write about the role of Planning Commission in developmental planning. This scribe is not competent enough to do that This is only a modest attempt to delineate the changing pattern and nuances of the working culture of the Commission from yesteryears

At inception the Commission did have a place of its own and was housed at different places-Rashtrapati Bhavan, 'M' Block hutments and Darbanaga House at Akbar Road. The top most echelon was housed at Rashtrapati Bhavan, the main working centre was at Darbhanga House and 'M' Block housed some not very important Divisions Any surviving old hand would remember those two big American cars, one a Dodge and the other a Buick (or was it a Chevrolet?) which used to shuttle between these places carrying men and material to and fro. A couple of years later Jam Nagar House Hutments, close to Darbhanga House were chosen in place of 'M' Block.

Planning Commission in those days was indeed different from other government departments. Shorn of hierarchical bureaucratic culture there was much more *camaraderie* and *bon homie* between its lowest and top functionaries unthinkable in those days with colonial administrative culture still persisting in other government departments

Different from other departments

An air of informality pervaled the working environment of the Commission which sometimes even reached incredulous proportion. Nehru's famous frown was noticed by many at, if one remembers correctly, the first meeting of the National Development Council held at Hyderabad House where all sorts of people down to the peons gatecrashed to witness the important occasion probably motivated by the desire to have a 'Darshan' of all top leaders of the country at one place from close range. Someone must be having a photograph taken on that occasion showing a turbaned peon and in office assistant flashing his shining teeth immediately behind Nehru, almost breathing down his neck, as a prized possession !

Most probably this informality was the direct result of an infectious awareness which percolated down to the junior most level that the Commission had been assigned a job entirely different from routine government work carried out in a bureaucratic atmosphere. This awareness imbued the people with a peculiar sense of belonging and pride in the institution which often found expression in their 'superior than thou' attitude and brassy manner *vis-a-vis* other government servants ! A junior research officer was not only permitted but often encouraged to submit his work samples to the top functionaries by passing routine hierarchical channel. People used to burn midnight oil on their own not merely to complete a job but also to enjoy the tingling sensation of achievement on its completion At times such an effort was adequately rewarded not in the form of monetary or service benefits but by appreciation of the people who mattered. A Research Officer of the Commission (now an Adviser) would recollect with pride how his note formed the basis of division of resources between Maharashtra and Gujarat after the bifurcation of Bombay ,and how on that fateful day he was asked to accompany the Deputy Chairman and Minister of Planning to Finance Minister's room in Parliament House in whose presence the Chief Ministers said : 'Let's agree to the arbitration of our young friends !' The young officer must have then imagined himself atop Mount Everest !

The working style of the Commission till mid-sixties was dominated by a top functionary who earned his eminence by hard work and also his closeness to Nehru. His influence was legendary, so much so that people used to say jocularly that there were three Sabhas in India, Lok Sabha, Rajya Sabha and . . Sabha prefixing his name to it! This gentleman had a working style of his own. He used to work very late hours and expected all his subordinates to be handy. Since he had his fingers on all the pies more than half of the Commission had to sit late and though the Commission at functional level was then acting like a team captained by this gentleman occasionally one could feel the rumblings of suppressed resentment. Himself a top bureaucrat he could cut down all the bureaucratic frills and reach down to the junior most person and could inspire him to undertake any work simply by half a smile. The example of hard dedicated work was set by himself Imagine a scene A top functionary of the Commission sitting in a dingy, grimy room of a press, sharing his table with junior people, clearing the proof of an important document page by page, forty-eight hours at a stretch, to keep up the deadline ! Sounds incredible ? Well, there are still a host of surviving witnesses to such a scene, and there were many such occasions. Team work then indeed was at its best !

This powerful person had his critics also both inside and outside the Commission who were also equally powerful and important by their own right Even these critics had to acknowledge his capacity for hard work and ability.

With both technical and secretariat services being in formative stage, recruitment in the Commission was made mostly on 'recommendation' and in the case of senior posts UPSC, is most cases, was presented with *fait accompli,* that is, it had only to rubber stamp its approval to the choice made by the Commission As such the new recruits were not ill at ease because they always had somebody known to them working in the Commission.

With haphazard growth in the staffing pattern, acute shortage of accommodation, with all the foibles and follies, achievements and frustrations of the people who worked there, for Plannng Commission it was indeed a most colourful and vibrant chapter !

The earlier aura missing

In early sixties the Commission moved to its own sleek multi-storeyed building, Yojana Bhavan when all its wings started functioning for the first time under one roof. By that time organised services like Economic and Statistical Services also came into being. With transfers from and induction into Planning Commission of talents, there started an era of cross-fertilisation of ideas and working style. With the passing away of Nehru the most impotrant link in continuity of working in a particular style was snapped Soon afterwards the country had to face a very rough weather caused by external aggressions and natural calamities like floods, severe drought, etc. which forced the country to have a virtual plan holiday for about three years. The prevailing situation presented a picture in contrast By then, on the one hand, the accumulation of expertise and techniques of planning had been greatly improved. On the other, the earlier aura attached to the Commission became faded to a great extent On top of it the frequent changes in the composition of the Commission following changes of Government also reduced the importance of the Commission compared to what it used to enjoy during earlier years

This scribe is not competent and it would be too audacious of him to pass any judgement whether Planning Commission, after the Nehru era, has been devalued *vis-a-vis* other government departments or institutions like Reserve Bank of India, Prime Ministers' Secretariat or Ministry of Finance. This may be a subject to be analysed by an informed and competent social scientist

However, one difference is easily discernible. The working style of "the Planning Commission is now marked by an impersonal professionalism with a well-defined hierarchical structure earlier absent in the Commission). *Bon homie* and *camaraderie* have been replaced by correct behaviour pattern between the boss and the subordinates Planning Commission can now claim to be a true government department."

1986 is a long way from 1950 and an institution set up then can no longer continue to have an unchanged working style. But for one who grew up with the institution it is a bit difficult to get adjusted to the new culture and one may unnecessarily become a little sentimental pining for those dappled days ? □

(*Contd. from page* 10)

cash, while the cash wages did not rise in proportion to prices suggesting that agricultural wage earnings of the labourers paid in kind are frequently greater than those paid in cash. These statements are true both in the long period as between 1859 and 1981 as well as in different areas at a point of time. In many villages, the bulk of the small ryots anticipate their crops, borrowing grain for seed and maintenance in the cultivation season and repaying the advance out of the crop at harvest. Whenever there was a general rise in the price level in the country as a whole the shift to cash wages was very slow. In times of local scarcities and famines, the employers were unwilling to part with their grain at the usual rates especially when they expected the local scarcities to continue and the labourers in such times were forced to accept payment in cash.

As a result of the frequent famines during the last decade of the 19th century, many of the annual farm servants were either thrown out of employment or forced to accept a major portion of their wages in cash. The labourer was forced to accept the reduced rates in cash because his opportunity cost was still lower than this rate and often the next alternative was either begging or starvation. The only consideration which induces the labourer to take to the work is that he steadily finds work at his own village more or less enabling him to tide over the distress which he certainly prefers to any relief work at a distant camp. During the operations which fell between sowing and harvesting, the stocks of grain with the employers is very meagre and, therefore, they find it convenient to pay in cash. Another reason being that the price of grain in this period being generally higher than in the other times of the year, the employers find it profitable to pay in cash. Cash wages granted in advance generally in the form of loans had been responsible for the bonded labour in many parts of the state. Kind wages are normally accompanied by fewer perquisites.

Daily wage labourers do not get work through out the year which results in static wage rates and migration to the cities. When people migrate to nearby project areas or cities, they demand cash wages due to the problem of transporting their kind wages to their native place. However, a portion of their wages as much as was necessary for their food was paid in kind.

Traditional perquisites disappear

Monetisation of wages and the steep rise in prices after 1950s and the seasonal fluctuations lead to the complete disappearance of the traditional perquisites. The rate of growth of productivity on a major portion of the agricultural land is nearly stagnant due to the dependence on seasonal rains for irrigation and absence of a drive in the methods of cultivation which is due to non-remunerative prices Above all is the diversification of incomes secured on agriculture towards other avenues such as business, acquirement of movable and immovable profitable assets in the urban areas, higher education of children, etc.

A shift for the worst !

Thus it clearly shows how the development of the market economy and commercial agricultural resulted in the 20th century not only in a shift from the permanent and yearly to the casual and daily types of labour force but also the accompanying shift of the medium of payment from grain to cash with practical disappearance of the traditional perquisites and the worsening conditions of the labourers. This had weakened the relations between the employer and the labourers and resulted in the creation of a class of agrarian prolitariate along with the growth of commercial agriculture □

Power generation in the country

The installed capacity of power in the country had increased from 2,300 MW in 1951 to about 45,000 MW at present. A further addition of 22,000 MW will be created by the end of the Seventh Plan

Medicines for millions by 2000 A.D.

M. Idris

Attainment of the goal "Health for all by 2000 A.D." is a commitment of the government. A new drug policy is in the offing. The author here says the primary objective of these policies is to keep public health care system and pharmaceutical sector in a harmonious state. He feels this sector being the foremost constituent of the health care system, the correct slogan should be "Medicines for millions by 2000 A.D." So, availability of cheap and life-saving drugs is a must. To mention the Union budget for 1986-87 has exempted 23 drug intermediates from customs tariff.

ALIVE TO THE NATIONAL COMMITMENT to attaining the goal of "Health for all by 2000 A.D.", the long-term fiscal policy announced in December 1985, equipped with a multi-pronged, strategy, gives a fillip to the endeavours of public health care by envisaging the life saving drugs as essential consumer goods to be exempted from custom tariffs at low or nil rate.

This setting forth on the course of action, as it appeared in the current Budget 1986-87, is a testimony to that additional care has been taken this time as compared to previous plans and budgets. Nevertheless, a national health policy based on the development of primary health care was evolved in 1982 by the Government. And now a new drug policy to potentiate the health policy is in the offing. The primary objective of these prevailing policies is to keep public health care system and pharmaceutical sector in a harmonious state. The latter being the first and the foremost among the essential elements of health care system plays a vital role in the constitution of the former. Therefore, the *mot juste* behind the celebrated slogan (Health for All) must be · Medicines for the millions by 2000 A.D.

Political commitment

The political support to the cause of public health care is deemed to be one of the significant health policy indicators. Thus the "Political commitment, in view of World Health Organization (WHO), is essential for the attainment of Health for All". Consequently a special emphasis was given during 1982-1983 on various aspects of health care in the Prime Minister's 20-Point Programme. Because of the keen interest taken by the late Prime Minister Smt. Indira Gandhi in raising the public heatlh status by all means and ends the health care system gained great momentum. She repeatedly asked the medical researchers to search for newer medicines defiant to prevalent diseases, and, *pari passu*, the drug manufacturers to produce medicines preferably from indigenous resources.

Moreover, the party in power at the Centre has given a fresh impetus to the implementation of the health strategy by its promise made in the manifesto for 1984 Lok Sabha elections which included 9 points related to public health care and provision of essential and life saving drugs.

A national health policy

Considering the magnitude of the problem, the Government was compelled to devise a realistic national health policy within a conceptual framework which enusred the planning and the attainment of its

objectives through the organised involvement and active participation of the people too. However, the national health policy set out the specific goals to be attained in a phased manner and time bound frame, *i.e.*, in the successive years of 1985, 1990, 1995 and finally the targeted year 2000. They are, therefore, considered as *sine qua non* for achieving the explicit goal making the people's move towards 21st century with robust health and in sense of well-being, true to the commitment made in the Constitution of India more than three decades ago.

performance, the drug industry is expanding staggeringly both vertically and horizontally.

Trends in production

At the outset of the First Five Year Plan the Government helped in the establishment and the development of domestic drug industry in both public and private sectors. The phenomenal growth in the production of drugs, from basic bulk drugs to finished pharmaceutical products, has dichotomised the drug industry into bulk drug and pharmaceuticals industries. The former, a technology intensive industry, is considered to be core of the latter in terms of raw materials and intermediates, etc. The bulk drugs constitute the basic products from which different down stream producers make their formulations in form of finished-products. Hence, for healthy pharmaceutical industry there must be a stable basic drug industry.

On-going goals to public health care

S.No.	Indicator	Current Level	Goals 1990	Goals 2000
1.	Infant mortality rate (in thousand)	125 (1978)	87	below 60
2.	Crude death rate	Around 14	10 4	9 0
3.	Crude birth rate	,, 35	27 4	21 0
4	Life expectancy at birth (in years)	Male 52.6 (1976-81)	57.6	64
		Female 51.6 (1976-81)	57 1	64
5	Pregnant mothers' ante-natal care (%)	40-50	60-75	100
6.	Immunizotions status	(%coverage) 20	100	100
7	Leprosy (% of disease detected)	20	60	80
8.	Tuberculosis (% of disease detected)	50	75	90
9	Blindness	1 4	0 7	0.3

Source. Ministry of Health & Family Welfare.

Sombre state of suffering

Millions in India, victims of a wide range of diseases, particularly communicable in nature, depict a dismal picture. The major maladies can be enumerated as :

Diarrhoea	361	million
Filariasis	236	,,
Amoebiasis	210	,,
Iodine deficiency	120	,,
Malaria	20	,,
Sexually Transmitted Diseases (STD)	20	,,
Tuberculosis	13	,,
Leprosy	3.9	,,
Blindness (Vitamin A deficiency)	1 2	,,

Pharmaceutical scenario

With patriotic endeavours of P.C. Ray, the celebrated chemist, the domestic drug industry emerged during British Raj and gained considerable momentum after Independence. Till 1947 the drug production was limited to merely Rs. 10 crore by less than 1000 pharmaceutical firms which currently shot up to Rs. 2000 crore generated by more than 8000 pharmaceuticals. In the areas of bulk drugs and pharmaceuticals indigenous capacity and capability have led to the development of over 60,000 odd-formulations; essential and non-essential. So, India finds a prestigious place on the map of pharmaceutical world. In technological terms, Indian drug industry, after Brazil, has become the biggest among the developing countries. Undoubtedly India has achieved self-sufficiency in the production of formulations, except for a few low-volume drugs, and the bulk drugs, their raw materials and intermediates. With remarkable performance, the drug industry is expanding staggeringly both vertically and horizontally.

Owing to the bottlenecks in the *modus operandi* there appears to have been a considerable decline in the production of pharmaceuticals. That is why the Sixth Five Year Plan's production target for bulk drugs was slashed from Rs. 665 crore to Rs. 500 crore and the formulations reduced from Rs. 2450 crore to Rs 1980 crore.

Ironically, the production of essential drugs and life saving drugs has also suffered severely as a result of drug manufacturers' reluctance arising from the Drug Policy of 1978 and the Drug Price Control Order, 1979 (of reasonable profit!)

Production of Bulk Drugs

Year	Rs. (in crore)
1965-66	18
1975-76	130
1978-79	200
1979-80	226
1980-81	240
1981-82	389
1982-83	325
1983-84	500
1984-85	500 (!)
2000	5000 target (estimated)

Production of Selected Bulk Drugs (in 1982-83)

1. Chloroquine (antimalarial agent)	80.82	metric tonnes.
2. Piperazine and its salts (anthelmintic drug)	129 05	,,
3. Tetracycline (antibiotic drug)	209 14	,,
4. Oxytetracycline (antibiotic drug)	119 57	,,

Export potential

Despite difficulties, the drug export has substantially increased from Rs. 2 crore in 1963-64, to Rs 111 crore in 1982-83. With intensive efforts in the production of various bulk raw material products from entirely indigenous resources the drug industry has excelled in export after successfully competing with the international giants like Japan, China and South Korea, etc. The main importers from India are USA, USSR, UK, France, Switzerland, Netherlands, Italy, Japan, West Germany and Australia These developed countries import following items from India ·

1. Antacids	· Aluminium Hydroxide, Magnesium Hydroxide, Magnesium Trisilicate, etc.
2. Iron salts	· Ferrous Sulphate, Ferrous Fumerate Ferrous Gluconate, etc
3. Inorganic salts	· Calcium Lactate, Dicalcium Phosphate, Tricalcium Phosphate, Sodium iodide, Potassium Iodide, etc
4. Mineral products	· Attapulgite, calcium carbonate, Talcum,, kaolin, etc
5. Plant origin products	Alkaloids, gums, resins, steroids, oils (fixed and essential), drug intermediates, etc.

Export of drugs and Pharmaceuticals.

Year	Export Rs. (in crore)
1977-78	60 77
1978-79	69.02
1979-80	71 16
1980-81	85 50
1981-82	95 41
1982-83	111 06

Export and Import of drugs and pharmaceuticals (for *1980* in m. US $)

Country	Export	Import	Balance
West Germany	2848	1617	1176
Switzerland	2154	495	1658
USA	2072	823	1249
UK	1765	527	1237
France	1092	132	960
Italy	681	707	26
Belgium	580	580	0
Netherlands	579	533	46
Japan	426	1132	706
Total	12,197	6,600	

Source : IDMA, Bombay.

Current emphasis

The Declaration of Alma-Ata (1978) has laid emphasis, *inter alia*, on the provision of essential drugs as essential element of primary health care and appealed to all nations (WHO's members) for giving top priority as SOS.

The Wise Choice of medicaments needed for health care delivery, particularly to under-privileged sections of the rural population, impels to formulate a rational policy on essential drugs. Otherwise—without these drugs—the effectiveness of public health care system would be seriously compromised. Strikingly, the case of communicable diseases, a persistent threat to millions' lives vulnerable to increasing incidence of morbidity and mortality, accords the high priority to essential drugs

Selection of life saving drugs

In 1977, WHO's expert committee on the selection of essential drugs has drawn up a model list comprising 200 active therapeutic agents which cover almost all the health needs of the majority of ailing masses. The committee concluded : "Because of the great differences between countries the preparation of a drug list of uniform, general applicability and acceptability is not feasible or possible Therefore, each country has the direct responsibility of evaluating and adopting a comprehensive list of essential drugs according to its own policy in the field of health. The list of essential drugs...is a model which can furnish a basis for countries to identify their own priorities and to make their own selection. ·Moreover, several complementary drugs, are also suggested as possible alternatives when infectious organism develops resistance to essential drugs or in cases of rate disorders or exceptional circumstances".

Keeping in view the significance of essential drugs the Government constituted a committee on 'Drugs and Pharmaceuticals Industry', poplarly known as "Hathi Committee", to incorporate the concept of essential drugs. On its recommendations, a Drug Policy was formulated in 1978

At present, in the Ministry of Chemicals, there is a monitoring cell that periodically reviews the availability of essential drugs and facilitates the demand of consumers and controls the price

Price control

To provide sufficient relief to the consumers, the Price Control Order (1979) has been promulgated. On its account the price, specially of essential drugs, are reduced The tariff commission's report shows Rs. 200 million annual benefit to the consumers.

Budget benefits

Determined to fulfil the objectives embodied in the long-term fiscal policy—for instance, tariffs for essential consumer goods, besides others, life saving drugs will continue to be low or *nil* with the volume of imports regulated through canalization procedures.

—the Government is earnestly striving through the Seventh Five Year Plan.

The relief-oriented budget provides, for the first time, incentives for both drug manufacturers and consumers by exempting life saving drugs from custom **tariffs**, as follows :

"In consonance with the Drug Policy 23 specified **drug intermediates** are proposed to be exempted from the levy of additional duty of customs, thereby reducing the total customs duty on these to 110 per cent, *ad valorem*. Revenue sacrifice will be Rs. 1 crore". (para 145), And : Examination of additional 41 Life Saving formulations from excise duty. This will cost the exchequer Rs. 15 crores". (para 146).

These incentives give a big boost to basic drug industry and help in the stabilisation of production of intermediates and satisfy the real needs of majority. With these positive steps (and some more expected in near future), the mission-oriented goal will be attained within stipulated span ending with the advent of happy and healthy era of 21st century. □

(*Contd. from page* 22)

(iii) The proper ventilation system should be maintained to control indoor pollution.

(iv) All workers should be well educated about accident and safety measures before putting them to work.

Soil pollution

(i) The site for solid waste disposal should be selected on down-wind of the settlement and should be such that there may not be undesirable percolation and seepage which can contaminate ground-water.

(ii) Reactive materials should be disposed off by standard sanitary land-fill practice.

(iii) The height of a proposed disposal site should be kept below a certain height so that the landscape is not spoiled and it should also be protected against flood, etc.

(iv) An intensive programme of trees plantation on the disposal area should be implemented

Miscellaneous

(i) Adequate measure should be taken for control of nuisance due to noise and vibrations

(ii) Precautionary measures to maintain occupational safety and health standards should be taken.

(iii) Adequate safety precautions should be taken for the maintenance and shut-down of the pollution control systems. A possible interlocking system should be implemented where highly toxic compounds are involved

(iv) Proper house-keeping should be maintained inside and outside of the industry.

(v) Township should be located at a suitable distance from solid and liquid wastes dumping areas from community health point of view

(vi) Proper planning should be made to meet out any emergency situation arising out of fire, explosion, sudden leakage of harmful gas, etc. An additional area may also be kept as green belt around such plant.

It is concluded that the industries are usually associated with the environmental problems. Most of the problems and needless headaches can be avoided by careful site selection and development. Thus, the whole effort should be made in such a fashion during selection of industrial site that an optimum economic gain shall derived from least deterioration of the environment and damages to ecology.

Committee on hill areas development

A Committee has been set up by the Planning Commission to advise on matters relating to planning for socio-economic development of the hill areas The areas to be covered are Jammu & Kashmir Himachal Pradesh, Sikim, North-Esatern hills, besides the areas already covered under the Hill Area Development Programme and the Western Ghat Development Programme. Areas which get recognised as hill areas in future will also fall within the scope of the Committee

The term of the Committee will be upto March 31, 1990. While making its recommendations the Committee will keep in view : (a) the special regional endowments, the diverse ago-ecological features as well as socio-cultural ethos of the area; (b) the threat to ecosystem; and (c) the urgency to restore and conserve it.

Changes in Poverty Line

The Poverty Line used in the Seventh Five Year Plan is the per capita expenditure level of Rs 10[illegible] per month in rural areas and Rs 122 in urban area at 1984-85 prices This corresponds to the calorie requirements of 2400 per capita per day in rural area and 2100 per capita per day in urban areas The Poverty Line will be up-dated for subsequent years

The estimates of poverty are based on the National Sample Survey (NSS) data on Household Consumption expenditure The estimates for 1983-84 were **based on** the 38th Round of the National Sample Survey. Since the next Survey will be undertaken only in 1988 or 1989, it is not possible to know the net change in the number of persons crossing the Poverty Line due to the updating of the Poverty Line

Hyperacidity and duodenal ulcer

Dr. D.K. Bhargava

Hyperacidity causing dyspepsia is not very uncommon. It is the result of oversecretion of acid by certain cells in the stomach. It may lead to duodenal ulcer or to non-ulcer dyspepsia, which require separate treatment. Certain factors having direct bearing upon hyperacidity are : aspirin consumption, smoking, excessive alcohol intake, emotional stresses and strains, and heredity. Though a number of antiacids are available, the best and easiest safeguard is prevention. In fact, what is needed is to forsake at once anxiety, smoking and excessive drinking.

HYPERACIDITY MEANS INCREASE in gastric acid secretion. This is commonly seen in patients having duodenal ulcer and non-ulcer dyspepsia. The scymptoms of this dyspepsia may appear as pain or discomfort in upper abdomen, heart burn, nausea, vomiting, belching, bloating and so on. These symptoms are non-specific as they are also present in other diseases such as gastrcesophageal reflux (burning sensation in Chest), gastric ulcer and so on. Ulcer is a wound caused by destruction of a membrane.

Gastric acid secretion

The dyspeptic symptoms are prevalent in around 10% of the population in our country. In the Gastroenterology out-patient department of All India Institute of Medical Sciences it is a very common problem. Majority of these patients have non-ulcer dyspepsia rather than an ulcer.

The gastric acid, i.e., hydrochloric acid, is secreted to facilitate digestion of food. It is secreted by parietal cells present in the stomach mucosa. Under basal condition (fasting) acid output is 10% of the maximum output. Physiological or pathological events cause biochemical reactions within the parietal cells resulting in increased gastric secretion.

Duodenal ulcer : Causes

In the development of duodenal ulcer in a given patient it is likely that a multiplicity of causative and contributing factors are involved.

Normally integrity of duodenal mucosa is preserved by a balance between acid, pepsin (an enzyme produced in the stomach) and mucosal resistance. When this balance breaks down the ulcer forms. In duodenal ulcer there is a hypersecretion of acid and pepsin This is evident by an abnormal increase in basal and maximal and output and pepsinogen secretion.

Risk factors

(a) Diet · There is no evidence that dietary factors cause or reactivate the duodenal ulcer though certain foods, beverages and spices may cause dyspepsia In India diet might be an influencing factor as the ulcer disease is more common in rice eating belt in South India compared to wheat eating in the north In one of the study the recurrence of ulcer was more with rice diet in comparison to wheat diet. This is possible due to high saliva output required for mastication in case of wheat diet. This in turn causes decrease in acid and bile secretion.

(b) Drug : Aspirin (acetyl salicylic acid) damages gastric and duodenal mucosa thereby producing erosions and precipitating upper gastrointestinal bleeding. A small number of patients taking aspirin develop ulcer, though a lower risk for duodenal

than for gastric ulcer. There is no documentary proof for other drugs like indomethacin or corticostaroids to be associated with ulcer formation.

(c) Smoking : Smokers are at increased risk for ulcer and this is directly related to amount consumed. It has also been observed that smoking impairs the healing and contributes to recurrence of ulcer. This effect is possible due to decrease in bicarbonate secretion and stimulation of gastric reflux of duodenal contents, which happen in the smokers.

(d) Genetic factor : There is evidence of genetic factors in 30 to 40% patients, with a positive family history. Similarly, ulcer is three times more common among the first degree relatives of ulcer patients. Further, duodenal ulcer is more prevalent in blood group 'O' persons

(e) Neuropsyhiatric factors : Emotional factors may alter gastric functions. There exists a specific ulcer personality characterized by exaggerated dependency-independency conflict Many patients of duodenal ulcer are hard driving, ambitious executives; and an emotional upset may trigger the onset or exacerbation of their ulcer.

(f) Predisposing diseases : Certain chronic diseases like chronic pulmonary diseases, renal failure and transplantation, cirrhosis liver, chronic pancreatitis, arthritis are associated with increased incidence of peptic ulcerations.

Symptomatology

The duodenal ulcer pain is normally in central part of upper abdomen, occuring 1-3 hour after meals, frequently awakening the patient at night Alkali and food produces relief However, these symptoms are neither specific nor sensitive for distinguishing duodeal ulcer from other causes of discomfort like gastric ulcer and non-ulcer dyspepsia. Further, ulcer may be present without symptoms in 25% of patients. Some patients may manifest with complications like haemorrhage, perforation or obstruction of duodenum. Non-ulcer dyspepsia mainly presents with upper abdominal fullness discomfort or burning, belching and bloating. These patients do not have any pathology of gastrointestinal or biliary tract. Statistically 50% patients of chronic abdominal pain have non-ulcer dyspepsia Some of them have classical duodenal ulcer syndrome (Moynihan's disease) and found to develop duodenal ulcer in 30% of patients in a followup period of 7-27 years These patients are usually depressed and have chronic tensions. Besides these there are several other diseases which may have similar symptoms of dyspepsia like biliary tract diseases, gastric ulcer and carcinoma reflux esophagitis, gastritis and musculoskeletal pain (spinal reflex syndrome).

Diagnosis

Each and every parent having dyspepsia does not need special conventional procedure like barium x-rays or modern endoscopy. It depends upon the length of history, age of patient and disruption of patient's activities due to symptoms. Duplication of investigations should be avoided as they are expensive. The special procedures should not be repeated for evaluation of response to treatment.

Therapeutic Modalities

The basic aim of treatment if ulcer is present is to relieve symptoms, heal the ulcer and to prevent relapse or complications.

Diet : Consumption of diets consisting of milk and milk products, bland diet, soft crushed diet, hallowed by tradition, have never been proved to be of any beneficial effect on alcer healing. Excessive and frequent drinking of milk even potentiates acid secretion, milk alkali syndrome and arterosclerosis The patients should be given a free hand in selection of diet Small frequent meals may however be useful, but not much difference has been noted in comparison to three regular meals. Bed time snacks should be avoided so as to inhibit nocturnal acid secretion. The food should be chewed properly, allowing it a thorough mix up with saliva Moderate amount of coffee or tea (3 to 4 cups a day), mixed with sugar and milk, may be allowed after ulcer heals up. Excessive alcohol intake is discouraged. However, mild to moderate amount may not be harmful. Smoking should be *prohibited* as it delays healing. It has also been studied that moderate amount of chillies do not interfere in healing of ulcer, hence one may not avoid the use of chillies in food until it produces dyspepsia *Fruit juices and* other non-alcoholic beverages in moderate amount may be allowed. If individual patients report to their physician that they experience increased symptoms with intake of certain foods or beverages it is reasonable to suggest that they eliminate those foods or beverages from their diet

Drugs : Several types of *Antacids* are available in the market They vary in their potency, palatability, adverse effects and their sodium content. Calcium carbonate and sodium bicarbonate, though inexpensive, should not be used as they can be harmful. Aluminium hydroxide and Magnesium oxide or trisilicate combination are effective and are free of side effects, if given in conventional doses. In general, tablet preparations are less potent than liquids. They should be administered 1 and 3 hours after the meals and at bed time. Each time 15 ml of antacid is adequate. *With regular treatment* ulcer heals up in about 80% of cases.

Besides antacids several newer drugs have been introduced in recent years These include cimetidine and ranitidine, sucralfate, celloidal bismuth, pirenzepine and omeprazol.

The data on sucralfate, colloidal bismuth, prostaglandins and omeprazole are sparse. Hence they are considered as second line of drug. Moreover, these drugs are not yet readily available in our country. The disadvantages of medical therapy include adverse effects of the drugs, poor patient compliance and cost.

Surgery : Surgery becomes necessary when there is perforation, obstruction, haemorrhage or failure to respond to medical treatment. Haemorrhage can also be controlled by newer techniques through endoscopes such as coagulation (electro or laser) and local injections. In developing countries like ours surgery may also be considered for people who cannot afford medical treatment which needs continued compliance.

Non-Ulcer dyspepsia :

These patients should not be treated like patients with duodenal ulcer Functional dyspepsia patients may not need any medicine except metoclopramide Most of the patients will improve by taking care of the measures mentioned under prevention. In contrast, patients who are categorised as with Moynihan's disease or duodenitis may be treated by drugs. Even in them there is no need of long term medication.

Prevention :

Prevention is better than cure and it is also much cheaper. As we have seen both for non-ulcer and ucler dyspepsia, psychology plays a part; more so in non-ulcer dyspepsia. The approach lies in taking care of :

(i) Diet · Eating right type of food. The recommended foods are balanced vegetarian diet (food items like milk, curd, fruit juices, vegetables, honey and grains with fibre content). Foods containing high protein and fat should be consumed in moderation. Highly spiced or chemicalised food items should be avoided Food should be chewed well

(ii) Beverages : Avoid excess of alcohol, coffee, tea, cola and chocolates

(iii) Drugs : Avoid excess use of aspirin or aspirin like substances.

(iv) Smoking is a high risk factor and it should be completely avoided

(v) Control over emotions · We should control anxiety, frustrations and hostility The attitude should be changed towards all stressful situations in relation to occupation, education, financial problems or family illness. These neuropsychiatric factors definitely constitute risk factor in both ulcer and non-ulcer dyspepsia. Use relaxation techniques like meditation and Yoga.

These are some of the ways by which one can take care of the risk factors associated with hyperacidity. Inspite of these measures if symptoms still persist, please consult a doctor and follow his advice. □

(Courtesy . All India Institute of Medical Sciences)

Stress on minor irrigation schemes in Seventh Plan

Steps are being taken by the Ministry of Water Resources for taking immediate irrigation benefits to the farmer through Centrally sponsored schemes under the Seventh Plan. These aim at strengthening the organisational structure at the State level for the development of ground water and providing assistance to the small and marginal farmer for increasing agricultural production. Another scheme for promoting the economic use of water through the sprinkler/drip system of irrigation is also being sponsored by the Centre

These schemes will accelerate the pace of groundwater development. Subsidy is being provided to farmers to use sprinkler/drip systems, water turbines and hydrants. This will benefit farmers in difficult terrain and backward areas where there is no electricity Rectification of inefficient diesel pump sets is also being taken up

An additional irrigation potential of 8.6 million hectares through minor irrigation is envisaged in the Seventh Plan. This is two thirds of the total target for the creation of irrigation potential in the Seventh Plan. The target of minor irrigation for 1986-87 is 1.71 million hectares

An outlay of about Rs. 6318 crore has been approved for the minor irrigation sector in the Seventh Plan

Long term agricultural credit

A multi-agency approach has been adopted for credit support to agriculture and rural development During 1986-87, long term agricultural credit amounting to Rs 600 crore is expected to be given for the purpose During the Seventh Plan period a total long term agricultural credit of Rs 3845 crore is to be disbursed. □

Investment on housing raised in Seventh Plan

TOTAL OUTLAY FOR the housing sector both in public and private sector has been raised to Rs.31,458 crore in the Seventh Plan from Rs. 12,991 crore in the Sixth Plan. This has been done with a view to reducing housing shortage in the country.

Also, under the 20-Point Programme, the amount of financial assistance for the Rural House Sites-cum-Construction Assistance Scheme for landless workers has been revised and a provision of Rs. 577 crore made for the purpose during the Seventh Plan period. Of this, Rs. 36 crore will be utilised to provide house sites and Rs. 541 crore for construction assistance. Under this Scheme, a developed house site upto 100 sq. yards is provided free of charge to the landless workers alongwith construction assistance. The amount of assistance for development of plot has been increased from Rs. 250 to Rs. 500 and the construction assistance from Rs. 500 to Rs. 2,000.

A proposal about the setting up of a National Housing Bank in the public sector to facilitate the availability of housing finance to as many people as possible is also under government's consideration. The Housing and Urban Development Corporation (HUDCO), a public sector undertaking, had sanctioned 4,090 schemes upto the end of 1985 for providing housing units to various categories. □

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Agriculture to be major employment-generating sector

IN FORMULATING the employment strategy, a key role has to be assigned to the growth of the agricultural sector during the Seventh Plan. A steady growth in agricultural production through the expansion of irrigation, increases in cropping intensity and the extension of new agricultural technologies to low-productivity regions could create a large volume of additional employment because these means have a high potential for labour absorption. However, the plan document feels that the agricultural sector alone cannot be expected to eliminate the backlog of unemployment and absorb the additions to the labour force. The rate of industrial growth must be accelerated. However, as experience has shown, even a high rate of industrial growth would not be able to create additional employment to absorb more than a fraction of the unemployed and underemployed labour force in the organised industrial sector. Therefore programmes of rural development and, in particular, of massive rural capital formation in the form of construction become necessary. This strategy, according to the Seventh Plan, would also help raise the rate of growth of agriculture. Further, it would increase the incomes and purchasing power of the weaker segments of the population and thereby provide the demand support to the growth process. □

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Land transactions in rural Punjab

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yojana

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Bank nationalisation anniversary

Land reforms to be speeded up during Seventh Plan

THE SEVENTH PLAN DOCUMENT recognises land reforms as constituting a vital element both in terms of the anti-poverty strategy and for modernisation and increased productivity in agriculture. Redistribution of land, it feels, could provide a permanent asset base for a large number of rural landless poor for taking up land-based and other supplementary activities.

A land reforms policy with a five-fold objective was continued in the Sixth Plan. The objective envisaged was : (i) abolition of intermediary tenures; (ii) tenancy reforms aimed at security of tenure; regulation of rent and conferment of ownership rights on tenants; (iii) ceiling on land-holdings and distribution of surplus land; (iv) consolidation of holdings; and (v) compilation and updating of land records.

It was expected that legislative measures to confer ownership rights on tenants would be introduced in all States by 1981-82 and that the programme of taking over and distribution of surplus ceiling land would be completed by 1982-83. It was also expected that compilation and updating of land records would be completed in a phased manner by 1985 and that consolidation of holdings would be taken up in all States with the aim of completing it in 10 years. However, only 15 out of the 22 states in the country have enacted laws on consolidation of land-holdings. The total area consolidated during the Sixth Plan was 5 6 million hectares -thus so far the total area consolidated is 51.8 million hectares.

During the Seventh Plan, land reforms will be looked up as an intrinsic part of the anti-poverty strategy. Wherever the laws have not been enacted by the States for securing the rights of tenants and regulation of rent, the State Governments will take appropriate steps to enact such laws during the Seventh Plan. Tribals and scheduled castes will be protected from alienation of their lands not only to non-tribals, but also to the big land-owners among them, through appropriate legislation. □

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Land transactions in rural Punjab (an analysis)

I.S. Chatha, Joginder Singh

and

S.S. Grewal

With constant rise in population, urbanisation is on the increase. Rural areas are shrinking and the demand for cultivable land is rising fast. In this paper, the authors examine the extent of land transactions in 9 out of 12 districts of Punjab and the level of land prices from 1973 to 1984. He also analyses the status of the purchasers and sellers with respect to the area owned by them and the reasons for affecting land deals.

LAND IS A BASIC factor of production in agriculture which largely determines the size of the business. Being inelastic in supply and immobile in nature, it assumes greater importance among the farming community with an increase in demand for it. As a result of increase in population, increased urbanisation and rise in productivity due to improved technology, the demand for land is increasing fast. It is, however, felt that owing to enforcement of various land laws, high cost of farm technology, exorbitant land prices, etc., the land market has somewhat frozen.

In this paper, therefore, an attempt has been made to examine the extent of land transactions and the level of land prices during the period 1973 through 1984. The study also analyses the status of the purchasers and the sellers with respect to the area owned by them and the reasons put forth by them for effecting land transactions.

Methodology:

The study was carried out in 9 out of 12 districts of Punjab where facilities for data collection were available. One representative village from each district was selected purposively for intensive study. This was done primarily to improve the reliability of data, by concentrating in a single village but we are conscious of the limitation that a single village may not precisely reflect the overall position of a particular district. The whole farming population of the selected villages was covered under the study. The total sample comprised of 522 farmers. The data were collected through specially structured schedules. The time series data were collected covering the period 1973-74 through 1983-84.

Land purchases

The position of land purchases made by the sample farmers during the period 1974 to 1984 was examined. The total purchases made and the total area purchased during this period are shown in Table 1. No specific trend was observed among the purchasers across different farm size categories. In all 124 farmers (23.75 per cent of the sample) made land purchases during the entire period. The area purchased by these farmers accounted for 27.62 per cent of the area owned by the purchasers or 8.83 per cent

of the total area owned by the sample farmers. The percentage of purchased area to total area owned by the purchasers in different farm size categories was inversely proportional to the farm size. The farmers in the farm size group upto 2.5 acres purchased as much as 90.18 per cent of their owned area during this period. The percentage declined to 12.65 in case of 30.0 to 40.0 acres farm size group. Farmers having above 40.0 acres holdings made insignificant purchases.

The total area purchased from 1974 to 1984 amounted to 0.94 acres per sample farmer and 3.95 acres per purchaser. The area purchased for sample farmer and per purchaser, in general, was higher in farm size categories upto 5.9 acres and 15.0 to 40.0 acres. This implies that the land being the basic input in farming enterprise, small farmers made more purchases in such categories in spite of their weak financial position. On the other hand, large farmers could afford to make more purchases to benefit from the improved technology especially mechanisation and from the economies of the scale

Reasons for making purchases

The main reasons advanced by the purchasers for making purchases were :

(i) to increase farm size whenever the cheap land was available ;

(ii) to invest money earned from farming as well as from other sources especially earnings from abroad as the investment in land was considered to be quite safe ;

(iii) the land was also purchased through mortgage whenever the mortgager could not repay the loan against which the land was mortgaged;

(iv) some purchases were made in lieu of the land sold elsewhere ;

(v) the land being adjacent to owners' farm ;

(vi) as a symbol of social status ;

(vii) to forestall purchases by other farmers adjacent to the buyer's owned holding ; and

(viii) motive to benefit from the rise in price of land.

Table 1

Land Purchases by the sample farmers in Punjab, 1974—1984

Size of owned holdings before transaction (acres)	Total No. of farmers	Number of purchasers	%age of purchasers to total No. of farmers	Area purchased (acres)	%age of area purchased to total owned by the purchasers	Per sample farmer area purchased (acres)	Per purchaser area purchased (acres)
Upto 2 5	70	15	21.43	88 00	90 18	1 26	5 87
From 5.0 to 5 0	81	29	35.80	93 32	42.57	1 15	3.22
From 5.0 to 7 5	87	21	24.14	51 12	27.78	0.60	2 43
From 7 5 to 10 0	98	14	14 29	46 00	27.84	0.47	3.29
From 10.0 to 15 0	89	15	16.85	46 87	20.07	0.53	3 12
From 15.0 to 20 0	46	14	30.43	72.12	22.75	1.57	5.15
From 20.0 to 30.0	30	11	36.67	71.00	22.43	2.37	6.45
From 30 0 to 40 0	11	4	36.36	21.00	12.65	1.91	5.25
From 40.0 to 50 0	7	..	..	..	.	..	.
Over 50.0	3	1	33.33	0.50	0.67	0 17	0.50
Overall	522	124	23.75	489.93	27.62	0.94	3.95

Land sales

On an overall basis, the area sold must synchronise with the area purchased. But the present study covered the sale transactions by the sample respondents only. Hence, the sale and purchase transactions did not tally because some of the sellers left the village or changed profession after disposing of their land and thus could not be contacted. The position of land sales by the sample farmers during the period 1974 to 1984 is shown in Table 2.

Table 2

Land sales by the Sample Farmers in Punjab, 1974—1984

Size of owned holding before transaction (acres)	Total No. of Farmers	Total No. of Sellers	%age of sellers to total No. of farmers	Area sold (acres)	% age of area sold to total area owned by the sellers	Per sample farmer area sold (acres)	Per seller area sold (acres)
Upto 2.5	70	3	4.29	3 00	75 0	0 04	1.00
From 2.5 to 5 0	81	6	7.41	14 00	62 92	0 17	2.33
From 5.0 to 7.5	87	8	9 20	28 00	52 83	0 32	3 50
From 7.5 to 10.0	98	8	8 16	36 35	52 16	0.37	4 53
From 10.0 to 15.0	89	13	14 61	55 00	33 28	0 62	4 23
From 15.0 to 20.0	46	8	17.39	69 00	50.92	1 50	8 63
From 20 0 to 30.0	30	5	16 67	52.50	41 83	1 75	10 50
From 30 0 to 40 0	11	2	18 18	17 00	25 00	1 55	8 50
From 40.0 to 50 0	7	1	14 29	50 00	100 00	7 14	50 00
Over 50.0	3	3	100.0	22 50	10 54	7 50	7 50
Overall	522	57	10 92	347 25	38 31	0 67	6 09

As compared to the position of purchase transactions, the number of sale transactions made by the sample farmers was less. No definite trend was observed across farm size categories also.

The reasons advanced by the seller farmers for selling their land were :

(i) Migration of farmers to other States to increase farm size by purchasing cheaper land ;

(ii) the sale of land was affected to meet family obligations such as marriage of daughters, construction of house and education of children ;

(iii) to repay the debts due ;

(iv) to shift to other occupations ;

(v) some farmers being addicted to opium and liquor sold part of their holding to meet the expenses ;

(vi) the land being marginal and out of the way was not considered economical and was disposed of :

(vii) to exchange the fragment of holding with the adjoining and convenient piece of land; and

(viii) Some issueless farmers disposed of their land out of frustration.

Position of land transactions

The year-wise composite picture of land purchases and sales by the sample farmers is summarised in Table 3. exchanged during 1978, 1979 and 1980 was 1.41, 2.24 and 2.08 per cent respectively. The year 1981 observed record transactions of 38 and 2.53 per cent of the area owned by the sample farmers was exchanged. After this, number of transactions declined to 27

Table 3

Land transactions by the sample farmers of Punjab, 1975—1983

Size of farm before transaction (acres)	1975		1976		1977		1978		1979	
	No. of transactions	Area transacted (acres)	No. of transactions	Area transancted (acres)	No. of transactions	Area transacted (acres)	No. of transactions	Area transacted (acres)	No. of transactions	Area transacted (acres)
Upto 2.5	1	0 75	2	12.00	2	1 25	2	4 00	4	16 00
From 2.5 to 5.0	1	2 00	5	12.00	2	8.00	8	17.75	7	22 15
From 5 0 to 7 5	3	2.50	2	5 00	2	7.62	6	18 00	4	9.50
From 7.5 to 10.0	2	5 37	4	7.62	..	..	3	7.00	5	20.50
From 10.0 to 15 0	1	0 50	2	6 00	1	2 00	5	13.50	2	6.50
From 15.0 to 20 0	3	5 87	4	24 00	2	10 00	1	1.00	1	6 00
From 20 0 to 30.0	2	5 00	3	34.50	.	.	2	7.00	3	26.00
From 30.0 to 40 0	..			.	1	9 00	..	.	1	8.00
From 40 to 50.0	..	..	..	..	..	.	1	10 0	..	..
Over 50 0	.		.		.	.	..	.	1	9.50
Overall	13	21 99	22	101 12	10	37.87	28	78 25	27	124.15
Area transacted as %age to total area		0 40		1.82		0.68		1.41		2.24

Table 3 *(Contd)*

Size of farm before transaction (acres)	1980		1981		1982		1983		Total No. of transactions	Total area transacted (acres)	Area transacted per transaction (acres)
	No of transactions	Area transacted	No. of transactions	Area transacted (acres)	No. of transactions	Area transacted (acres)	No. of transactions	Area transacted (scres)			
Upto 2.5	2	13 50	3	15 00	1	2 00	3	9 00	20	73 50	3.68
From 2 5 to 5 0	9	25 75	7	11 00	6	12.50	6	7 42	51	118.57	2.24
From 5 0 to 7.5	4	9 62	2	3 50	5	8 25	4	9 25	31	73 24	2 36
From 7 5 to 10 0	3	13 75	3	10.00	4	13 50	1	8 00	25	85.74	3.43
From 10 0 to 15 0	3	6 50	8	36.00	5	21 25	2	8 50	29	100 75	3 47
From 15 0 to 20 0	5	18 75	5	22.00	2	12 50	2	3 00	25	113 12	4.52
From 20 0 to 30 0	1	2 00	7	35 00	1	1 00	1	8 00	20	118.50	5.93
From 30 0 to 40.0			2	5 00	1	3 00	1	3 00	6	28.00	4.67
From 40 0 to 50 0	1	16 00		..	1	24 00	..	..	3	50 00	16 67
Over 50.0	1	10 00	1	3 00	1	0 50	..	.	4	23.00	5.75
Overall	29	115 87	38	140 50	27	98.50	20	66.17	·214	784.42	3.63
Area transacted as %age to total area		2.08		2.53		1 78		1.19		14.15	

It will be seen from this table that in 1975, the total land transactions were just 13, transacting only 0 40 per cent of the total area owned by the sample respondents. The number of transactions increased to 22 in 1976 exchanging 1.82 per cent of the total area. There was a fall in 1977 in the number of transactions to 10. From 1978 to 1980 the number of transactions varied between 27 and 29. The area in 1982 and 20 in 1983. During a span of 9 years i.e. 1975 to 1983, as many as 214 transactions were made by 181 persons and 14.15 per cent of the total area owned by the sample farmers was exchanged.

The above analysis revealed that land transactions each year were not of any sizeable magnitude. The probable reason for this could be a decline in the

number of very big land holders over time who were the sellers earlier. It also implied that due to lack of alternative employment opportunities a majority of the farmers were sticking to their inherited profession which led to freezing of the land market.

Land price

Land is a commodity which rarely finds competitive market. The numerous considerations of buyers and sellers to buy and sell the land stem from its location, productivity, availability of other farm resources, availability of funds for its purchase, political stability, various social and legal considerations and above all its price.

The prices of land which prevailed over time from 1975 to 1984 are presented in Table 4. Though there was a lot of variation in land price prevailing during a particular year, yet the price in general increased over time. The average price (modal) was about Rs. 13000 per acre during 1975 which rose to Rs. 20000 in 1978 and recorded a small increase till 1982. The year 1983 witnessed a spurt in price which was Rs. 32000 per acre and further rose to Rs. 35000 in 1984.

The minimum price of land had a consistently upward trend upto 1983. This was because of the fact that apart from general rise in prices, minimum price was for the poor quality and marginal land and during this period of rapid development the quality of such land improved. No doubt, there was a rising trend in the maximum price also but the same was erratic in nature. Usually, maximum price of land is determined strictly by personal considerations. The maximum price touched Rs. 60000 per acre during 1984.

An increase in land price in monetary terms is natural under a situation of rising prices. It was examined as to whether the increase in land price was commensurate with the increase in general price level. For this purpose, the land price was deflated with the wholesale price index. The figures given in last column of the Table 4 brought out that the price of land in real terms was more or less constant upto the year 1982. However, it witnessed a sharp increase, from 1983. This was the manifestation of growing scarcity of land, the tendency to invest in real estate in an inflationary situation and above all lack of alternative investment opportunities for the buyers.

Land price vis-a-vis productivity

The relationship between land price and value productivity is examined in Table 5. The land price was found to be about 146 per cent higher in 1983 compared to 1975. Likewise, value productivity showed an increase of about 140 per cent during the same period. The indices of deflated value productivity also witnessed almost similar increase. This implies that land price has increased in close sympathy with the increase in value productivity of land.

However, the rate of return on investment in land showed a different picture. An acre of land purchased for Rs. 32000 yielded a gross return of Rs. 2663 in 1983. The net return was estimated at Rs. 1465 per acre which in other words means a return of 4.58 per cent. The rate of return examined in an alternative manner, i.e by relating land rent to land price showed that the rent was Rs. 1200 per acre in 1984 which gives a rate of return of 3.75 per cent. Viewed from this angle, the land price was found to be higher than what was warranted by the return on investment in land. This may largely be due to the fact that in the purchase of land several non-economic considerations weigh with the persons investing in land.

Table 4

Price of land in Punjab, 1975 to 1984

(Rupees per acre)

Year	Minimum	Maximum	Model: At current price	Model: Deflated by all-India index number of wholesale prices
1975	3000	16000	13000	13000
1976	3000	25000	16000	16316
1977	4000	18000	14000	13275
1978	4800	25000	20000	19005
1979	6000	44000	20000	17027
1980	7000	26000	23000	16297
1981	8000	30000	22000	13892
1982	10000	45000	23000	14172
1983	14000	50000	32000	18271
1984	1000	60000	35000	18097

(Contd. on page 33)

Decentralisation for faster rural development

P.B.S. Bhadoria
and
A.N. Bose

Is decentralisation of power an answer to faster rural development? Responding in affirmative the authors give example of West Bengal where at village, block and district levels Panchayat System is proving very effective. Various development plans are being implemented through these Panchayats. They also list the limitations of the decentralised process and tell how a new work programme drawn under the Panchayat System is being implemented successfully in Midnapur Zilla Parishad since March, 1985.

In West Bengal election to 3-tier Panchayat [District, Block and Anchal composed of about 10 average villages with a total of about 10,000 people] was held in 1978 after a lapse of more than one decade. Immediately after the Panchayat election, there was a devastating flood in the State. The new Panchayat proved its utility by setting exemplary standard of flood relief work. This was the beginning of decentralised, popular activity by the elected representatives of the people.

In the villages, blocks and districts, the authority of the respective tier of the Panchayat is now well established. The fact that most of the Panchayats are controlled by the ruling party members has been helpful for the Government to support the decentralisation of power.

Decentralisation

In practice this has meant that at least some of the functions earlier performed by B.D.Os. or District Magistrates, are now performed by the respective panchayats. In particular, direct governmental, effort for rural development, say, through Food for Work, N R.E.P., R L.E.G P, IRDP, Tribal sub-plan, special component plan, etc. are now implemented through the panchayats. This is both the core of their work, and also constitutes the core or content of the practice of decentralised activity form.

Limitations

The limitations of this decentralisation process basically arises from the limitations of the programmes coupled with the specific socio-economic milieu in which panchayats had to implement these programmes in their respective areas. The limitations of the programmes arise from:

(a) The fact that programmes were formulated at the Centre or State headquarters far away from specific realities of the village

(b) The nature of the programme which provides only some relief without making any efforts to change basically the socio-economic-cum-political causes which makes relief necessary in the first place. Such programmes, therefore, cannot eliminate poverty. Decentralised implementation of such programmes through popular representatives have meant in prac-

tion generation of illusion followed by frustration, and sometimes spreading of corruption at the grassroots level.

(c) Meagre allocation of resources for the programme has meant firstly that only a few can be covered such that, it may take several decades to cover all the people below the poverty line, and secondly the amount per beneficiary is so small that only those who are at the border of the poverty line may derive the benefit required to cross the poverty line. This has meant that rather than the poorest, it was the better-off among the poor, and often a few who are not poor at all, have been selected for the relevant programme.

(d) Most of the programmes are family-centric individualistic ones. These, therefore, often act as barriers for organisation, which could have provided them with better benefit, say, through implementation of Minimum Wages Act, and similar other provisions.

New Work programme

This work programme is being evolved in the Midnapore Zilla Parisad through, what we call, a mutual training programme to implement peoples planning process. The main aspects of this programme are :

(a) Starting point of decentralisation from the bottom should be the 'village', or 'muhallas' in a bigger village, where all the adult population can meet together and discuss. In all other levels, including the 'Gram Panchayat' with more than 10,000 people it becomes necessary to substitute people by their representatives. Starting from village is more necessary in our country because in our class-caste-sex divided society the effective 'representatives' are generally from those nearer the 'land owning, upper class, Male' end of the social spectrum and so they are furthest away from the 'Landless, tribal, female' end. As such, it is more difficult for the 'representatives' to correctly express the wish of the oppressed, poorer people unless they take particular care to have and to sustain proper orientation among others, through live contact with the people

(b) To enable the oppressed to put their effective imprint on the whole village meeting, there will have to be separate meeting with Landless and Land poor, with tribals and other classes kept backward, and with women prior to the general meeting.

(c) The above aspect pre-supposes that there will have to be conscious attempt on the part of the panchayat to look at all events not from the point of view of the oppressors and big property owners but from the point of view of the oppressed and the propertyless, and the toilers.

(d) Socialism as the long term goal of our people has been formulated also in our Constitution. This change of basic social structure can become the most serious long term goal only if one can look at the society from the point of view of the oppressed toilers, although the resulting benefit from social change can accrue to the society as a whole.

(e) All short term moves, including implementing this or that current programme, will have to be so designed that it may effectively serve, and not subvert, the long term goal of socialism. This should be the basic criterion for monitoring and evaluation of all decentralised rural (and urban) development programmes.

(f) It will have to be borne in mind that decentralisation facilitating going to the people as mentioned in (a) above, may be EITHER for purpose of instituting and strengthening the illusion of the working people that poverty can be eliminated slowly without changing the present property relations, present socio-economic structure, only if they can have faith in the present political leadership, OR for the diametrically opposite purpose, viz., for enabling the people to get rid of all illusions regarding the capability of the present social structure to remove poverty and for strengthening their capacity to develop their own self-reliant organisation, the basic tool for turning over the present society for establishing a new one.

(g) Framing rural development plan should start with listing requirements of the villagers themselves with whatever assistance that can be made available to them, all their needs starting from, say, digging compost pits, or developing community need or community grain store etc. to establishing Technical Training Institutes or even producing steel to manufacture agricultural implements etc. This will make them aware that they are citizens of a big country and also of a big planet. Then they should identify from among that exhaustive list what can be done by them independently in their specific village and distinguish these from other items which they may be needing but can be tackled at a level higher than their own village. For example, if the village needs a drainage channel to be free from waterlogging and if the drained water is likely to flood a neighbouring village, then the concerned village should identify the need for drainage channel and leave the framing and execution of the specific scene to the higher level of decentralised apparatus, the 'Gram Panchayet'. Similarly the G.P. should try to find what can be done, without affecting others, in its own cluster of villages, and forward the two lists to the higher level, the Panchayat Samity. Similarly, from the P.S. to the district and from there to the state and ultimately to the centre. After some experience, it should be possible to sub-divide at least state and concurrent list into (i) village subjects, (ii) gram panchyat subjects, (iii) panchyat samity subjects, (iv) district subjects, and the residual as (v) state subject. There may also be several subjects under concurrent jurisdiction. Just like the division of National Plan fund into central and state plans. Similarly the latter

should be divided between 'State' and 'District' fund and then District, P.S., G.P. and village fund.

(h) In each level, particularly at the village level, the next task is to further sub-divide the tasks ear-marked for that specific level into those (i) which can be done by the villagers themselves, without the help of bank or government; this group may be designated as 'peoples sector' this may include compost pit, health education, adult education centres, maintenance of village roads etc., (ii) which can be done with bank loan; this group may be called 'bank sector' this group includes all the activities through which one can earn significantly more than the liability represented by bank loan repayment with interest; this may include crop loan with crop insurance, loan for minor irrigation devices, village industry, warehousing etc. and (iii) which can be done only with government grant, and may be called 'government sector' this may include running of formal schools, hospitals, construction of roads, etc. and (iv) a 'joint sector' where more than one of the above three sectors will have to be combined, such as is done today with IRDP schemes.

The main purpose of dividing the schemes into four sectors is to find out the maximum of what can be done by the 'peoples sector' both for mobilising the idle sources, particularly the human labour, and for fighting back decisively the present trend of dependence for everything on government. It is a pity that 'planning' has come to mean to many as only how to get more government fund for various schemes in their own area.

(i) Limit of resources for the 'peoples sector' arises from the 'State of peoples' consciousness and their organisation. Limit for 'Bank sector' arises on the one hand from the level of deposits in the district concerned and, on the other, on the capacity to frame bankable schemes. So far as the first aspect is concerned, in Midnapur district only about 10 per cent of the deposit, despite the Reserve Bank directive to use at least 60 per cent of it. is invested in the district and as such in practice there is no limit to tap the bank fund other than the level of organisation of the people for using properly bank finance. More serious is the limit for government fund. Hence, all the schemes which will have to be implemented with government fund, should be arranged in terms of both priority as well as the year by which the scheme can be implemented, taking particular care of the backward and forward linkages.

(j) It will be necessary in this context to frame a 'perspective plan' devoting the advance considered to be realisable towards the long term goal of socialism, say, by next 15 years, and then frame 'Five Year Plan' and the detailed 'Annual Plan' denoting the steps each will take to achieve the perspective.

Implementing the new programme

The above programme has been taken up since March, 1985 by the Midnapur Zilla Parisad with 12,000 villages, 518 gram panchayats, 54 blocks or panchayat samities now with about 7.2 million people. This represents, in practice, substantive change in their earlier mode of functionig. They could do it because of their experience for the last five years in participating with IIT, Kharagpur in eight blocks in the programe for initiating the peoples planning process, along with a deep analysis of the malady arising from the current pattern of functioning of the panchayat system, and the step however late and hesitant it may be—taken by the State Government for decentralisation by establishing District and block level planning committees.

It is true that plan for the year, 1985-86 could not start with villages. But most of Blocks did take into account the G.P.s, and large number of G.P.s did take into account at least few villages. So all the 54 blocks could submit their plan based on G.P. and few on village level.

For the year 1986-87 significantly larger number of villages—if not most of them—will be covered, ultimately transforming the planning process from a preserve of technocrats and bureaucrats into a conscious movement of the people.

Significant rise in non-oil exports

The non-oil exports during the nine months ended in December last stood at Rs. 7,520.42 crore, showing an increase of 8.2 per cent over the exports during the same period in 1984. This increase was mainly due to the increase in exports of agricultural commodities like cereals, cashew kernels, processed foods and marine products, besides ores and minerals, gems and jewellery, ready-made garments, jute manufactures and man-made textiles. The value of exports of cereals increased from Rs. 77 13 crore in April—December 1984 to Rs. 196.84 crore in April—December 1985.

The gross exports during April—December 1985, however, amounted to Rs 7655.57 crore, showing a decline of six per cent over that of 1984. The decline is mainly attributable to stoppage of exports of crude oil consequent to the development of domestic refining capacity. The export of crude oil during April—December 1985 amounted to only Rs. 135.15 crore as against Rs. 1194.44 crore during April—December 1984.

Imports during April—December, 1985 amounted to Rs. 13,866.57 crore, showing an increase of 18 per cent over that of 1984 during the same period. The increased imports was partly due to bulk items like fertilisers, petroleum products and sugar. □

Fiscal transfers should help remove disparities

Dr. Naseem A. Zaidi

In this paper, the author evaluates fiscal transfers from the Centre to the States as recommended by various Finance Commissions, especially by the Eighth Finance Commission. He describes the formula of the Eighth Finance Commission for distribution of proceeds from income tax and union excise duties as progressive as, according to him, it puts more resources at the disposal of the States thus enabling them to shoulder larger responsibilities. The author, however, laments that the Centre's policy regarding distribution of grant-in-aid is guided by factors other than those for reducing economic disparities among the States.

THE PHILOSOPHY of fiscal federalism calls for ome degree of equalization in the fiscal position of ederal centre and federal units. While the responsiility for overall growth of the country belongs to he Central Government, implementation of this olicy may involve a regional orientation. Some units ay enjoy a high taxable capacity but may have reatively low level of needs. They are thus in a fiscally tronger position as measured by the ratio of capaity to needs, as compared to other units which have nore liabilities and less amount of resources at their lisposal. The federal Centre has to play an equaliation role by liberal devolution of financial resources to more needy units.

In India, devolution of fiscal resources from the Centre to States takes the form of statutory fiscal transfers—those recommended by the Finance Commissions, non-statutory transfers agreed in the National Development Council in the form of Plan assistance, and other transfers recommended by various Ministries from time to time. The objective of the present paper is to evaluate fiscal transfers recommended by the Finance Commissions, specially those recommended by the latest, i.e., Eighth Finance Commission. These transfers take the form of tax sharing, grant-in-aid for various purposes and debt relief on account of non-plan capital gaps. The transfers are in the form of vertical sharing i.e. sharing between the Centre and the States and, horizontal sharing, namely the sharing of the proceeds among the States.

Vertical sharing

As far as the question of vertical sharing is concerned, it appears that through the recommendations of the subsequent Finance Commissions it has reached an ideal state and no Constitutional change is required for that. The share of States in the personal income tax increased from 55 per cent as recommended by the First Finance Commission to 85 per cent recommended by the Seventh and Eighth Finance Commissions. The shares of States in the Union excise duties increased from 20 per cent recommended by the Third Finance Commission to 45 per cent recommended by the Eighth Finance Commission. The number of commodities forming the divisible pool under Union excise increased from 3, 8 to 35 as recommended by the First, Second and the Third Finance Commissions respectively. Since the Fourth Finance Commission, proceeds from all the commodities subject to basic excise duty form

TABLE 1

Ratios of tax Sharing and Gap-Grant recommended by the Finance Commissions
"State's share

(Rs. Crores)

Finance Commission	Tax sharing (Income and Excise)	Gap-Grant Under Article 275(1)	Total	(2) as % of (4)	(3) as of (4
1	2	3	4	5	6
I	366	27	393	93.1	6.9
II	586	185	771	36.0	24.0
III	818	252	1070	36.4	23.6
IV	1135	423	1558	72.8	27.2
V	3988	713	4701	84.8	15.2
VI	6979	2683	9662	72.2	27.8
VII	18,821	1627	20,448	92.0	8.0
VIII	31,166	2200	33,366	93.4	6.6

Source: Eighth Finance Commission

divisible pool. These changing trends have put increasing amount of resources at the disposal of the States. Table 1 brings forth the fact that share of taxes in the total transfers devolved to States increased from 36 per cent in the Second Finance Commission to 93.4 per cent as recommended by the Eighth Finance Commission. The depleting share of grant-in-aid has reduced the chance of manoeuvring by some States in their revenue expenditure accounts to get a large chunk of resources in the form of gap-filling grant. There has been a considerable step-up in the States' share on the basis of the various recommendations of the Finance Commissions. Taken together the recommendations of the Eighth Finance Commission, the total amount of transfers increased from Rs. 20,843 crores during the period of the Seventh Finance Commission (1979—84) to Rs. 39,452 crores as recommended by the Eighth Finance Commission (1984—89)—an increase of 89 per cent.

Some States demand a Constitutional change for inclusion of corporation tax, and some go to the extent of custom duty, to be included in the divisible pool. As far the question of inclusion of corporation tax in the divisible pool is concerned, the Eighth Finance Commission did not arrive at a definite conclusion and held the view that 'a further review of this matter was overdue for removing a 'major irritant in Centre-State Relations'. Keeping the issue unresolved is a *lacuna* as there may not be a more competent body than the Commission itself to examine the issue. Inclusion of corporation tax in the divisible pool may not benefit States as, in that condition, States' share in the income tax may not be retained at 85 per cent. The argument may be put forth that corporation tax is more elastic tax as compared to income tax, and its inclusion in the divisible pool may put large resources at the disposal of the States. But putting larger resources at the disposal of States at the cost of Central resources may result in smaller amount of transfers from Union Government to States in the form of grant-in-aid, debt relief, assistance for relief expenditure, assistance in the form of upgradation of economic, social and administrative services and non-statutory transfers. In the words of Guhan "The important thing is not what is shared, but how much of it is shared...... It cannot be presumed that long term development and non-responsibilities of the Union are likely to take second precedence to those of the State enabling significant progressive increases to the share of the latter."

The expansion of the scheme of additional excise duties to replace sales tax on certain items such as medicines, cement, vanaspati, petroleum products etc. suggested by the Jha Committee has met with opposition from the States who look upon the levy as causing erosion of their own taxing power. On economic considerations, sales tax is more elastic tax as it is based on *ad valorem* rates while additional excise may be specific or *ad valorem*.

Horizontal sharing

As far the question of *inter-se* distribution of financial resources among the various States is concerned while tax-sharing is becoming more and more rational on the basis of recommendations of the subsequent Finance Commissions, *lacunae* are there in the distribution of grant-in-aid for various purposes.

The need for a common formula to guide allocation of proceeds from income and excise duties was realised earlier also. For distribution of income tax, upto the Seventh Finance Commission, a weightage of 80 or 90 per cent was given to population and the remaining proceeds were distributed on the basis of 'collection' in each State—a factor which got 10 or 20 per cent weightage. In regard to excise duties, the first Six Finance Commissions used 'population' to determine 75—100 per cent of the proceeds. The balance was, generally, distributed on the criteria of 'economic backwardness' which differed from Com-

tion started with the recommendations of the Sixth Finance Commission which gave 25 per cent weightage to economic backwardness measured by the 'distance criterion'—the distance of State's per capita income with that of the State of highest per capita income. The Seventh Commission followed a more rational formula for distribution of proceeds from the Union excise duties in which equal weightage was given to population, inverse per capita SDP, percentage of poor population and to a revenue equalization formula which in the words of the Eighth Finance Commission "did not amount to any thing different from the distance criterion."

Eighth Commission more innovative

The major innovation in the field of distribution of proceeds from income and the Union excise duties started with the recommendations of the Eighth Finance Commission which abandoned differential criteria to a great extent, for both the levies. According to the recommendations, 90 per cent of the divisible proceeds from income tax (10 per cent on the basis of collection) and 40 per cent of the net proceeds from Union excise forming divisible pool should be distributed by a Uniform Formula giving a weightage of 25 per cent to population, 25 per cent to the inverse of per capita income multiplied by population and 50 per cent to the distance of per capita income of any State multiplied by population The Commission also recommended 5 per cent of the proceeds to be distributed among 11 deficit States.

The newly adopted formula is progressive in different ways : Population which distributes 'unit share per capita' in all the States, does not guarantee larger shares to weaker States. In the words of Guhan "It (population) is a uniform scaling factor i.e. a distributive rather than redistributive yardstick". In both the criteria viz. inverse per capita SDP, and the the distance criteria. relative economic backwardness is taken into account. The impact of the progressive formulae upon distribution of proceeds from income and Union excise among relatively backward and relatively advanced States is clear from Table-2. Group A includes the special category States (now Sikkim also included in the group), for the purpose of federal transfers. Group B includes the States which are economically backward as these States have to afford large populations. Group C includes some advanced States enjoying higher per capita SDP.

Increasing shares of backward States

It is clear from the table that both in income tax as well as Union excise duties the share of relatively backward populous States is increasing. In case of income tax it increased from 44.76 per cent in the Sixth Finance Commission to 50.37 per cent on the recommendation of the Eighth Commission. In case of excise duties this increase was marked even on the basis of the Seventh Finance Commission as it adopted a progressive formula. Increase in share in these States is not at the cost of Group A States which have low population but it is at the cost of advanced States in Group C. There is a sharp decline in the share of income tax for these States which dipped from 21.1 per cent in the Sixth to 15.6 per cent as recommended by the Eighth Commission. Thus the progressive formula has put more and more resources at the disposal of the States which carry larger responsibilities due to large population.

Grant-in-aid

Though the Eighth Finance Commission broadly agreed with the three principles of grant-in-aid formulated by the Seventh Commission viz. (1) covering fiscal gaps (2) reducing disparities in the availability of various administrative and social services in different States and (3) assisting the States for meeting special problems of the national concern the quantum of grant recommended by the Commission (Eighth) for various purposes like filling the revenue gap, payment of increased amount of dearness allowance by the States, grant for upgradation of services. Grant-in-aid for special problems etc may not solve the problems of populous States like U.P., Bihar M.P. and Orissa as availability of per capita grant to these States is much lower as compared to the

Table 2

Share of States in Income and Union Excise Duties

Percentage of the Divisible Pool

States	Income tax			Union Excise Duties		
	Finance Commissions			Finance Commissions		
	VI	VII	VIII	VI	VII	VIII
Group A 1	4 67	4 63	4.94	5.05	5 03	5 28
Group B 2	44 76	44.08	50.37	48.50	52 78	53.20
Group C3	21 12	21.44	15 62	16.55	13 14	12 15

1. Group A includes Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Nagaland and Tripura.
2. Group B includes Bihar, Madhya Pradesh, Orissa, U. P. and West Bengal.
3. Group C includes Punjab, Haryana, Gujarat and Maharashtra.

Source: RBI Bulletin, August 1984. Table 1 and 2 pp. 275-77.

special category States. The total amount of grant recommended for 8 States namely Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Nagaland, Sikkim and Tripura comes to Rs. 1736.2 crores. On the basis of 1981 population these States are expected to receive per capita grant amounting Rs. 485 while the same for U.P., Bihar, Madhya Pradesh and Orissa is only Rs. 35.6. Thus the statutory grant would benefit special category States comprising a population of 3.58 crores at the cost of interests of 25.89 crores of population residing in the bigger States.

If we examine the revenue expenditure pattern (on Revenue Accounts) of the various States, we find while there is no big gap between per capita revenue (from States' own taxes, share in the Central taxes and non-tax revenue) in special category and populous States; a big gap exists in the per capita grant from the Centre in these two groups of the States Larger Central grant results in larger per capita revenue and expenditure in special category of States. The trend is shown in Table 3.

Though wide disparities are there in the per capita expenditure in different states on these services yet the Eighth Finance Commission which adopted 'physical norms' for upgradation of these services has not tried to reduce disparities in expenditure by recommending larger grants to the States which are able to incur less amount of expenditure on these services. West Bengal spends more on these services but the Commission recommended larger grants to West Bengal as compared to U.P. which spends lowest amount of money on these services

In distribution of grant-in-aid no set policy has been adopted by the subsequent Finance Commissions. In projecting revenue, the fact that a particular State is under-taxed, is not taken into account. In approving the non-Plan revenue expenditure, the discretion of the Commission plays more important role. The Eighth Finance Commission approved higher per capita non-Plan expenditure for West Bengal (for the period 1984—89 per capita expenditure of Rs. 348.5) as compared to Karnataka, Tamil Nadu, Gujarat and Andhra Pradesh while per capita tax revenue in these States was much higher as compared to that in West Bengal. Thus West Bengal managed to get largest amount of grant-in-aid out of 22 States of the country.

Table 3

Per Capital Revenue Expenditure of States*
(Revenue Accounts) for 1981-82

Rs

Group of States	States own tax revenue	Share in Central taxes	Non-tax revenue	Grant from Central	Revenue	Expenditure
Group A . .	60 36	57 89	53 66	196 7	368 7	333 3
Group B	77 10	65 90	33 21	34 3	210 5	194 0

Group A includes all the States in Table 2 and Sikkim
Group B in same as in Table 2.
* On the basis of 1981 population

Source: RBI Bulletin, October 1983.

Due to neglect of the thickly populated States, the per capita non-Plan revenue expenditure for the period 1984—89 comes out to Rs. 294 5, Rs. 287, Rs. 207.8 and Rs. 219.9 for Orissa, M.P., U.P., and Bihar respectively against an average of Rs. 305 for 15 major States.

Due to different revenue capability of different States, a wide gap exists in the standard of social and administrative services provided by different States. Table 4 indicates the average per capita annual expenditure on education, scientific services. medical facilities and health measures, police and administrative services in the years 1981-84 in selected States.

The conclude, while in the Centre-State financial relations in India a redistributive policy has been adopted in the matter of tax sharing, the distribution of grant-in-aid is guided mainly by the factors other than reducing economic disparities among the States.

Table 4

Average Per Capita Expenditure on Selected Social and Administrative Services* in the year 1981-84

Rs

States	Average per annum Expenditure				Total	Upgradation grant
	Education	Health	Administrative services	Police		
Punjab	86 86	34 00	44 3	22.7	187 86	.
Kerala	95 40	30 60	22 9	12 5	161 50	16 81
W Bengal . . .	59 17	28.30	25 9	16 7	130 07	176 37
M.P.	38.50	25 50	21 2	13 0	98 80	147 70
Bihar	42.90	11 70	21 3	12 2	88.10	130 27
U P. . .	35.30	15 70	18 0	11 8	80 80	108 18

Source: RBI Bulletin, October, 1983 and the Eighth Finance Commission
*Recommended by the Eighth Finance Commission for 1984-89.□

Managing livestock to boost rural economy

Dr. G.P. Mishra

Though rich in livestock, India ironically still remains far behind in animal productivity. In this article the author highlights the characteristic pattern of relations between livestock, agriculture and industry, and the state of livestock economy in the country. He says livestock farming should help optimise the produce of animal esource and for this clustered village approach with a cooperative institution should be adopted. The state, he feels, should play a catalytic role in providing appropriate infrastructure.

THE QUESTION of efficient livestock farm management has three major dimensions—firstly, how to manage and develop the stock of animal resources (i.e., development of livestock economy); secondly, how to harness and exploit the stock of animal resources in the social process of development; and, finally, how to grow capital for investment. All these aspects of livestock farm management, if undertaken for investigation, assume that animal husbandry has emerged as an enterprise and is separated from farming as a specialised branch of production. As a result, livestock farms operate on the principle of 'gains from trade' and the economics of livestock enterprise takes care with its principles to assess as to how 'the gains from trade' can be maximised. But the question is : whether or not livestock farming has emerged separate from farming as a specialised branch of production leading to an enterprise. In this regard, some precaution or reservation is needed because the present state of livestock economy reflects it as the blending of crop culture and caste| community-specific culture of animal husbandry and pastoralism, despite having some state-sponsored and private owned livestock farms in different parts of the country. In view of this idea, and in my opinion, the question of developing the stock of animal resources and optimising the produce from the use of a given stock in the process of sectoral development should be taken into consideration.

In this background, I propose to discuss here the characteristic pattern of relations between livestock, agriculture and industry, and the state of livestock economy in the country. These two will help us in setting guidelines for formulating management perspective of livestock development.

Role of livestock

Livestock is one of the major sources of our national wealth. A significant part of sectoral growth and employment generation depends on the livestock economy because it supplies raw materials to a number of consumer goods industries such as leather, dairy, woollen, meat processing, etc , provides draught power to agriculture and products for direct human consumption In a way, the livestock economy omits a structure of sectoral linkage in the development process of Indian economy.

The developmental role of livestock in the sectoral process of growth and employment creation, in the first instance, depends on the state of livestock economy and on the totality of production conditions (i.e., an overall development of productive forces and an overall level of their social intercourse in the process of production) prevailing in the economy at a given point of time.

Let us take the state of livestock economy in the country. Firstly, we have the largest bovine popula-

tion in the world. But in terms of animal productivity we are one of the most backwards on the world map of development—whether we take yield rate of milk or meat or skin and hide. Secondly, animal husbandry continues to be joint domestic economy unit, despite development of commodity-money relations in the livestock economy. Thirdly, animal husbandry is caste|community-specific activity carried out at household level, that is to say, the mode of animal domestication is caste-specific in character. Fourthly, animal husbandry is not yet fully free from the hold of traditional pastoralism which refers to a form of animal husbandry as an exclusive source of dependence for subsistence. Fifthly, technical mode of animal domestication and production is, by and large, pre-capitalistic in rural India. Finally, commercialisation of animal resource and products is less normal but more forced. As a result, animal husbandry has partially emerged as an enterprise and many of the stockowners have involuntary involvement in the market and they are exploited by the traders who appropriate a large chunk of surpluses. Hence animal husbandry results in a restrictive source of capital accumulation and the level of investiveness is quite low in this sector.

Management Perspectives

For pragmatic management of livestock farming, there is a need to comprehend the state of livestock economy and the characteristic pattern of sectoral relations with this economy at both levels—inter-regional as well as intra-regional. The spatial dimension of management is required because animal rearing culture is specfiic to given eco-social system and that spatially varies in the country.

The present state of livestock economy and the pattern of its sectoral relations, given an eco social system and environment, reflect that livestock farming should optimise the produce of animal resources such as draught power, milk, dung, skin and hides, meat, etc. In order to optimise produce, efforts should be made for upgrading the existing technical mode of animal husbandry or innovating new technical mode of animal farming (such as breeding) suitable to the prevailing environmental conditions in rural areas so that it could have built-in *internaliser effects* there. For making such developmental efforts effective, there should be one central place in a cluster of villages with a cooperative institution to render technical and demonstration services for internalising the technical innovation in the development process of livestock farming. The state should play a catalytic role in providing appropriate infrastructures to cooperatives for making an effective use of new or upgraded technology.

. In this regard, regions or areas specific to livestock farming or animal husbandry, which has grown as a domestic economy unit spatially different in rural India (or for that in any state) in varied environmental conditions, should be identified and accordingly efforts should be made by the state to use the technology through the cooperative system or institution.

Given the optimisation goal from a given stock through the application of modern science and technology, spatial variations in environmental conditions (which correspond to specific species) should be taken into consideration. While doing so, specialised animal husbandry should be promoted and all efforts should be concentrated on the farming of specific animal species.

All such management perspectives also require planning to overcome certain constraints existing on the farming of livestock which stand on the way to optimisation goal. For instance, let us take the case of pasture or grazing land and production of animal feeds. The intensive use of land with growing population pressures in the absence of suitable alternatives to absorb surplus farm labour has led to shortage of grazing land and feeds cultivation and this shortage has resulted in surplus bovine population. The existence of surplus population costs the state and society in the absence of beef-eating consumption behaviour of a large number of people. In that case, beef-processing industry specific to space and society should be promoted for export. The state can play an important role in promotion of beef processing industry.

Sheep or pig or chicken rearing is found to be specific to certain space and society. In fact, this is a result of the caste|community-bound division of labour, being historically specific to environmental conditions or eco-social system. Hence this aspect of pastoral culture and the specificity of a given eco-social system should be kept in mind, while going for the promotion of sheep, pig and chicken farming. The sheep and pig rearing culture is also closely associated with community grazing land which has steeply shrunk to a quite small size due to 'land hunger' resulting from lop sided perspectives of land reform.

Briefly speaking, the optimisation goal demands low-cost new technology and inputs specific to animal species and farming culture which correspond to the spatial specificities of given eco-social systems and conditions. All this requires clustered village approach following the principle of cooperation. Area-specific animal husbandry should be encouraged on a systematic and scientific basis and accordingly, animal grazing land and feeds cultivating culture should be sustained. There should be marketing cooperative societies to deal with the purchase and sale of animal resources and products which are used as consumption articles directly by people and as inputs in various consumer goods industries. Such societies are urgently required because the

(Contd on page 22)

A new strategy for cattle development

Dr. R.K. Sharma

Launched during the Third Five Year Plan period, the Intensive Cattle Development Programme sought to offer conditions conducive to good cattle breeding with a view to raising milk production by 30 per cent. In a study of the implementation of the programme in the Gurgaon district of Haryana, the author found its performance very unsatisfactory. He lists major constraints and suggests a new management strategy and a communication system to make the programme a success.

WHILE INDIA RANKS FIRST in the world in terms of bovine population, it stands twentieth in terms of milk production. The present level of production of milk in the country is far short of requirements. To overcome the gap in milk production, the 'Intensive Cattle Development Projects' (ICDP's) was launched during the 'Third Five Year Plan' in various parts of the country. It offered conditions conducive to good cattle raising with the objective of increasing milk production to the extent of 30 per cent within a period of five years which was a big leap forward in this direction. These projects were designed to provide cattle owners a package of improved practices covering controlled breeding, proper feeding, effective disease control, scientific management, duly supported by adequate marketing facilities, extension activities, etc. But the available evidences indicated that the performance of ICDPs had been far from satisfactory. With a view to developing a constraint-oriented management system for efficient execution of ICDPs, a study was conducted in Gurgaon district (Haryana) where one of the oldest ICDPs of the country was operating since 1967. The main focus of the study was on the delineation of the constraints which were identified from the view point of farmers and field functionaries.

The data were collected from 180 heads of bovine keeping families of eight villages, 100 Livestock Assistants (LSAs) and 29 Veterinary Surgeons (VSs) operating in ICDP.

An average cattle keeper was found to be low in communication behaviour with neutral attitude towards dairy farming, carrying medium perception of infrastructural efficiency and low expectations from ICDP.

Majority of cattle keepers were found to be low adopters of improved breeding, management and marketing practices. However, the adoption of nutrition and disease control practices among majority of them was in the medium range.

Adoption

The relational analyses between the traits of the respondents and adoption established that two of their traits, viz., communication behaviour and perception of infrastructural efficiency played a leading role in promoting the adoption of breeding, nutrition, disease control and marketing practices as well as overall adoption. In the adoption of management practices this was credited to education and socio-economic status. Distance of Stockman Centre was found to have decelerating effect on adoption of the practices.

Major constraints

In a large percentage of cattle keepers, the level of constraints in availing the services and facilities of ICDP was found to be in the medium range.

Some of the major constraints from the view point of farmers in utilising the services and facilities

of ICDP, were less or no market value of male cross-bred calves, poor results of AI in buffaloes, non-availability of high-yielding varieties (HYV) of fodder seeds and mineral mixture in the area, lack of knowledge of improved feeding practices, non-availability of adequate quantities of medicines in Stockman Centres and hospitals, problem of obtaining of Veterinary aid in emergency at the door-steps, purchase of milk on fat percentage basis with no consideration of SNF, non-existence of milk cooperative societies in villages, etc.

The relational analyses indicated that the two traits of cattle keepers, viz., communication behaviour and perception of infra-structural efficiency exerted their negative influence on the overall constraints in the same order as they exerted positive influence in promoting the overall adoption. Distance of Stockman Centre had additive influence on the constraints.

Field functionaries

A majority of livestock assistants operating in ICDP had undergone livestock assistant training course of only six months duration. A sizeable number of LSAs and Veterinary Surgeons were not trained in AI. Majority of them had knowledge of only one to two objectives of ICDP and carried medium level of job satisfaction.

Functional constraints

The level of overall constraints in a large percentage of LSAs was in the medium range and that of VSs in the low range. Some of the major constraints of field personnel in carrying out the programmes of ICDP were non-availability of experts' services for treatment of cases of reproductive disorders, presence of scrub bulls, inadequate training in fodder production and nutrition aspects of dairy cattle, high cost of FMD vaccine, lack of credit facilities for cattle keepers, lack of cooperation from local leaders in promotion of cattle development programme, etc.

The relational analyses indicated that two traits of LSAs, viz., job satisfaction and knowledge of ICDP objectives exerted highest negative influence on their constraints. On the contrary, AI training duration manifested positive influence. The traits of VSs were devoid of significant relationship with the constraints.

A Management system

Based on the findings of the study, a management system for efficient execution of ICDP would be one which will accelerate the adoption of improved dairy farming practices envisaged in the programme among the farmers and promote infra-structural efficiency of the ICDP organisation. An overall view of the identified constraints crystallizes them into the following two broader perspectives which need to be strategically dealt with by a correspondingly two-pronged attack :

1. Constraints arising out of low communication behaviour and resultant lack of cattle keepers required faith in modern dairy innovations, and consequent need for an effective educational programme for them so as to achieve their active participation and willing cooperation in promoting the programmes of ICDP.
2. Constraints of inadequate services, supplies and facilities at infra-structural level ; and consequent need for improving the infra-structural efficiency and developing for field personnel of ICDP the working conditions conducive to a really effective cattle development effort.

Communication strategy

(i) Need for change in farmers orientation regarding the economic importance of cattle wealth is indicated by the study. To be specific creating a feeling of discontent among them about the present low status of milk production and dissuading them from traditional practices of cattle raising, faith in quacks and indigenous methods of treatment and control of diseases. An awareness and understanding among them of the modern dairy husbandry innovations is a necessary prerequisite to achieving their cooperation. This calls for a consciously conceived well planned and meticulously implemented educational programme.

(ii) The retrograde value orientation still persists among many people because they have not yet had a convincing taste of improved dairy husbandry practices. The factors, such as, use of scrub bulls, ignorance about the utility of artificial insemination (AI), non-acceptance of prophylactic vaccination, faith in quacks and indigenous methods of treatment for various reproductive and other ailments, etc., still operate as serious constraints in cattle development programme. To make farmers aware of such important aspects, calculated efforts need to be made to conduct result demonstrations mainly for educational purpose. The success stories need to be picked up and given wide coverage. The facilities offered by various agencies relating to cattle development and the procedures which the villagers should adopt to avail themselves of these facilities should be publicised frequently. The effort should be to make each villager feel that the facilities offered are meant for him and that he can freely utilise these.

(iii) Some of the salient topics on which the cattle keepers need to be educated to help them appreciate the modern dairy innovations and cooperate with the exponents of modern cattle development programmes are as follows :

(a) Importance and utility of AI practice in animals, right time of insemination, neces-

treatment of reproductive disorders and sterility cases, heat symptoms in cows and buffaloes.

(b) Importance of balanced feeding, scientific feeding schedule recommended for dairy animals with special emphasis on the feeding of green fodder, compounded feed and mineral mixture, provision for clean and fresh drinking water, etc. Economic schedule for raising green fodder all the year round, silage and hay-making.

(c) Importance of prophylactic vaccination against some of the common contagious diseases, viz., HS, RP, FMD and BQ, deworming and deticking. Awareness and understanding of the names of common contagious diseases, their major distinguishing symptoms, nature of contagion. necessity of reporting the contagious outbreaks on time; how, when and to whom the contagious outbreaks be reported, scientific disease control measures, etc. Extent of damage and loss from some of the contagious disease in terms of livestock wealth, their financial value and the efficiency of production and animal power.

(d) Scientific principles of housing the milch cattle, care of pregnant and recently calved animals, necessity of feeding colostrum to new born calves, providing of salts licks, steps to be taken in raising healthy calves, hygienic methods of milking and use of strip cup as a measure to check mastitis, etc. Importance of keeping record of milk production, data of service|AI, dated of calving, etc.

(e) Importance of selling milk through organised sector, keeping record of milk sold, selling animals with certificates of health, vaccination, etc. Utilisation of loan and credit facilities available for the purchase of inputs through institutionalized agencies and carrying out money transaction through banks.

Infrastructure

The study has revealed that farmers' perception of infrastructural efficiency has a substantial influence on their utilisation of services and facilities of ICDP. Therefore, all-round efforts on the lines given below have to be made for efficient execution of the programmes of ICDP.

Breeding programme

(i) Keeping in view the less market value of crossbred male claves from the viewpoint of the farmers, it is a point for examination if the existing policy of cross-breeding is suited to their needs. The farmers cultural operations. But they do not find these calves suitable for this purpose.

(ii) Poor results of AI in buffaloes have been responsible for a serious setback to the artificial breeding policy with its obvious adverse repercussions even on the cross-breeding programmes in cows. Hence, it has to be decided if AI should be continued in buffaloes, especially in ICDP areas, where this has been observed to operate as one of the major constraints in the growth of artificial breeding programme in cows.

(iii) The utilisation of scrub bulls by the farmers is mainly due to failure of the animal to conceive on AI or inaccessibility to AI Centre owing to spatial constraint or to avoid the birth of a cross-bred male calf. A pragmatic approach would be education of the farmers on the importance of using high pedigree bulls for breeding purpose, undertaking of mass castration compaigns provision for efficinet AI services on all days and at all times of the week at the doorsteps of farmers, and a suitable breeding policy on the lines discussed earlier.

(iv) The constraint of too much repeat breeding due to AI can be overcome to a certain extent by using frozen semen. So long as frozen semen is not available in required quantity, the use of frozen semen be restricted to only remote areas.

(v) Keeping in view the magnitude of the problem of reproductive disorders in animals, appointment of one specialist (possessing M.V.Sc degree in Reproduction Physiology or Gynaecology and Obstetrics with sufficient experience) at each of the RAICs, exclusively for treating cases of infertility and productive disorders is very essential. Besides organising campaigns for treatment of such cases, especially, during breeding season, the specialist should so plan his tours that each of Stockman Centre is visited by him on a fixed day of the week every month. He can also train the other staff in the diagnosis and treatment of reproductive disorders in animals.

(vi) All the field personnel of ICDP who are either untrained or undertrained need to be provided training in physio-pathology of reproduction for a period of three months. Major emphasis during this training should be on practical aspects of the things so that the trainees develop required skill and understanding of the right technique of AI, diagnosis and treatment of reproductive disorders, pregnancy diagnosis, evaluation of semen quality, its preservation, sterilization of AI equipment, importance of asepsis in handling AI equipment and while carrying out AI, etc.

(vii) The items and equipment required for carrying out AI, preservation of semen, sterilization equipment, etc., should be provided in sufficient quantity at the Centres. In monthly meetings, the staff should be required to spell out their requirement.

Nutrition programme

To facilitate the availability of fodder crop seeds of HYVs, multiplication farm should be set up in ICDP areas at suitable places. For this purpose, help of several agencies and institutions, such as, State Farms, Agricultural Universities, Department of Agriculture, etc., is needed. The coordination of these institutions has to be brought about at the State Government level.

(ii) As far as possible, the fodder demonstration plots should be laid on the fields of small and marginal farmers and at least one demonstration plot on village approach road may be provided in each of the village in ICDP area.

(iii) The provision of staff for promoting the fodder production at the headquarters of ICDP and at the field level is very necessary.

(iv) The field staff need to be given short term training in nutrition of dairy cattle and fodder production.

(v) The facilities of credit for the purchase of inputs presently available through some of the commercialised banks, cooperative societies, etc., may be provided on easy terms and conditions. The availability of such facilities with particular reference to 'how and from whom' the farmers should avail themselves of these facilities may be well publicised. Nevertheless, the facilities of credit should be duly supported with the availability of necessary inputs in the area so that the amount is rightly utilised by the beneficiaries concerned.

(vi) The feed items such as, compounded feed, mineral mixtures, feed additives, etc., should be available on fixed price on government controlled rates. Only those manufacturers whose products come upto the ISI standard may be permitted to produce and market these items.

Management programmes

(i) To make certain regular and well planned supply of sera and vaccines the district authorities should indent for the vaccines at appropriate time so that these are available to the field staff well in advance of the vaccination time. They should be supplied vaccines in accordance with the quantity indented by them rather than requiring them to complete a particular target of vaccination

(ii) The cost of FMD vaccine has to be further subsidized to make it popular among those owning cross-bred animals.

(iii) For timely and prompt reporting of outbreaks of contagious diseases, 'Disease Control Committee' comprising members drawn from Panchayat functionaries and other suitable persons from amongst the interested villagers may be constituted by the field personnel in each village of their jurisdiction. The disease control and other activities pertaining to cattle development may be taken up in village through this committee.

(iv) Adequate supply of medicines, instruments and other items of daily use to the field institutions is very essential.

(v) The disease investigation and diagnostic facilities available at district headquarters should be fully utilised by the field staff.

(vi) Deworming, deticking and vaccination campaigns should be organised as a regular practice by the field staff in their respective areas. To achieve successful results in this direction, they should prepare a calendar of operations for carrying out these activities all the year round.

(vii) A mobile veterinary dispensary may be provided at the headquarters of each RAIC..

Marketing programme

In order to save the producers from the clutches of middlemen, the milk cooperative societies have to be set-up in all the villages covered by the project in consultation with milk plant authorities so that the entire saleable milk is lifted at mutually agreed price. The prices of milk should be so fixed that the producers continue to sustain their interest in selling milk to the cooperative societies rather than to the middle-men.

(i) The cooperative societies should provide incentives to the producers by arranging loan from the banks for the purchase of milk animals and other inputs on easy terms and conditions

(ii) The milk plant should be required to set-up milk collection centres at the convenient points of the societies.

(iii) The payment to the producers for the milk purchased should be made regularly

(iv) The account of the societies should be audited regularly. The grievances of the producers should be taken care of by the supervisory staff and suitable remedial measures be taken promptly wherever needed.

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(Contd from page 18)

owners of animal resources and products are grilled under the exploitative wheels of traders and merchants.

A forward look in the backward state may not make us move ahead on the path of development as socially desired if the present state of livestock economy and pattern of its sectoral relations are comprehended in the context of the economy as a whole. ☐

Consumer protection, a myth ?

Dr. P.K. Kotia
and
N.K. Sharma

With the rise in the income of the people the quality and sophistication of the consumer goods has also increased. The market is literally overflowing with new products based on intricate technology. With it has also increased the incidence of fleecing and defrauding the consumer for he is not educated and vigilant enough to protect his interests. In this article the author deals at length with the enigmatic questions of greater disclosure of facts relating to a product, the risk involved and the pricing. He stresses the need to inform the consumer adequately and feels the state should come forward to his rescue with relevant legislation and statutory force.

FROM EVERY WALK of life a public debate is in the offing about consumer protection. The foremost reason for this is the rising income and a cornucopia of new products which has multiplied the number, value and variety of consumer's market transactions. Therefore, there are more chances for consumer deception than ever before. Furthermore, the mounting variety of consumer products is increasing the competitiveness of our economic system. In turn, this may be leading to a deterioration of business ethics, thus giving rise to added interest in consumer protection. Yet, it is not at all clear that deception in the market place has in fact increased, what is clear is that the history of India is a record of accumulated social and technological efforts to protect the individual from adversity of every sort. The drive for consumer protection may be viewed as simply a continuation of those efforts.

What we have done in the field of consumer protection after independence is commendable to some extent. However, one major issue poses a serious threat to the entire field of consumer protection and 'underinformed Indian buyer'. On every aspect, the buyer is being deceived indirectly through non-disclosure of relevant information. It can be seen in the following paragraphs.

Product information

The Indian economic system is based on the belief that free and intelligent decisions in the market place, rather than government interference, will produce the most efficient allocation of resources towards the achievement of private and social goals. To exercise free and intelligent choice in the market place a consumer must have access to terms of sale and product information. However, it is likely that large scale production and loss of personal relationship have endangered the reliability of product information. Another factor adding fuel to the fire is that new materials, new designs and attractive packaging have increased difficulty of choosing one product or brand from the other. Growing number of tooth-pastes, Jeans and Synthetic Textiles with varying prices amply illustrate this situation. Problem of adequacy and comprehension of product performance information may be compounded in the case of durable goods. However, consumers are less capable of evaluating durable products because of the greater degree of technology involved, long-life and varied conditions under which these products are used to cloud post-purchase brand comparison. Sewing machines, refrigerators, fans, etc., are some examples of this category.

One of the important factors connected with product information is the language of advertisement. Like the glittering windows of posh shopping arcades they are rich with colour, shining with light and often glittering with tinsel but lacking proper information about the product. Will such advertisements produce any result or leave any imprint on the mind of the consumer?

It is recognized in certain quarters that it was not what the product contained but what the advertisement contained. Colgate toothpaste says, 'Cleans your breath", while it actually cleans the teeth. Advertisements for expensive and durable products on the other hand need more information than just glamour to sell. One cannot easily purchase a refrigerator or a T.V. by looking at advertisements only. Here we want to mention a case of sound advertisement in its kind, and that is of Godrej refrigerator. In this recent advertisement a comparison has been made between Godrej, Kelvinator and other referigerators from every angle.

The main question is how greater disclosure of product and terms of sale information are to be achieved? There are, of course, difficulties also in providing greater information to the consumer. The problems of communicating technical information to non-technical people, the time and space limitations of the vehicle of communication and the cost of time and space are some of the major problems which must be taken into account.

Demonstration techniques

Another aspect closely related to under information is the lack of proper demonstration techniques of durable and costly products. Indian buyers generally neither ask nor read or remain ignored about instruction manuals or guarantee cards supplied to them due to the medium of instruction barrier or the technical aspects involved in the instructions, especially in the literature of two-wheelers, pressure cookers, T.V. and other electrical and sophisticated items. This problem can be solved to some extent by using a simple slide film presentation of the product at the time of purchase, so that the buyer can observe each and every technical aspect of the mechanics| techniques, supported by occasional visits of the area| by Sales Manager can be a highly productive method. The firm can conduct periodical survey by supplying the questionnaire to the consumers to ensure that the customers have followed the technical and other aspects of the product very well.

Pricing level

Another area of which the consumers do not have complete and proper information is the pricing, especially in the credit or hire-purchase business. There is a spate of sellers who find it profitable to sell on hire-purchase in spite of the high risk involved. Delhi and Bombay newspapers are full of advertisements of T.V. and referigerators on hire-purchase basis and the business is flourishing for the last two years. However, the customer has no idea of how much is to be paid for credit or hire-purchase under the attractive slogan of "Easy Instalments". Cost of credit is not differentiated from the cost of product, because the customers are apt to think more of the quantity of payment than the final cost of the item or the length of the contract. What is noteworthy is that the credit charges are not regulated by the law as it has been regulated in the U.S.A. The need of the time is that the credit charges should be regulated and it must be the responsibility of a seller to disclose to a buyer clearly about the total payment he will have to pay under hire-purchase and the price of cash sale. Barring a few exceptions, the goods being sold on hire-purchase are of poor quality. Consumers are also equally responsible for this sordid affair because they are not concious about the quality and price of the product.

Product risk

If there is any product risk to the consumer or unreasonable hazards attached to that product which may be harmful to the consumer in any way it must be made known to the consumer in a categorical language.

In India today, amidst technological advancement, there are a number of makes, models and types of products which constitute unreasonable hazards to the health and safety of consumers. Our responsibility would not be over by printing statutory warning on cigarette packets and liquor bottles there are other durable products involving high degree of technology which are risky and need much care to handle. Stove agricultural threshers, cooking gas, medicines containing aspirin and other harmful contents, etc., are some of the examples of this category.

Suggestions

In the aforesaid description we have analysed and examined the problem of under information to the buyer. Following are the suggestions to overcome this crippling problem :

Our first and foremost recommendation is about the legal sanction regarding consumer affairs. Wilful violation of the laws related to consumers which do not carry with them severe and criminal penalties. are galore. It must be noted specifically that corporate violation affects far greater number of people than the conventional street crime, in fact and in potential.

Another suggestion is to advocate consumer participation in corporate decisions affecting the consumers. Share holders, in general, in India are not considered a force to reckon with. If we want to protect the consumers, interest, they should be given participation in corporate decisions. Some general and technical societies can be formed to give moral support to these technocrats who are working in the industries because of the professional conscience

dealing with a defective product. If an engineer or a doctor is expelled or demoted or in some other way abused because he has protested strongly to the management about a defective product or violation of consumer protection device, the technical society should stand by strongly for him.

Next suggestion is to apply the political concept of LOKAAYUKT to the marketing organisations. There be a Lokaayukt who will disseminate the material information regarding product, product risk, price, quality, etc., to the consumers. In addition, he will : (a) receive consumer complaints directed to the business enterprise, (b) litigate the complaints, (c) submit his report to the interested individuals and the aggrieved party, (d) supervise and follow-up the adjustment procedure.

Efficiency of the Lokaayukt should be measured on the basis of his effectiveness in serving the consumer rather than serving the profit orientation of the firm. Although, it is very difficult, but could be achieved by giving the mandate of new consumer orientation of the firm. Our proposed Lokaayukt would enjoy autonomy in his working given by the organisation. The Lokaayukt would have authority to analyse and examine in detail the manufacturing, selling and advertising procedures adopted by the firm. In a nutshell, the proposed Lokaayukt will work just like a fact finding Inquiry Commission.

A further level of protection may be provided through standardisation of weights and quantities in which consumer products may be distributed for retail sale. Standardisation of weight and qualities would provide informational gain to consumers, because it would call attention to price increase which is otherwise hidden from consumers in the form of reduction in quantity. Not only this but standardisation would, to some extent, check the adulteration problem also. Vegetable oil edible oil, tea leaves, eatable spices, etc., must be sold in standard packs, with the number of inspections.

To sum up, today the Indian consumer suffers due to ignorance of fraud, excessive price, exorbitantly high credit charges, product risk, poor quality, etc. It is the need of the time to solve this problem of under-information and to disclose all material information regarding the product to the consumer. □

Policy objectives of the new steel strategy

A strategy is being worked out for the development of the steel industry. The two major policy objectives set in this regard are : to make available steel to consumers at the lowest possible prices at par with international level and standards; and to attain self-sufficiency in steel. The broad parameters of the new strategy being worked out are : to obtain maximum production from the capacities installed at the integrated steel plants by completing modernisation programmes in time ; to consider additons to the capacities of the existing public sector steel plants and the Vizag steel project under construction; and to maximize production from the capacities already created or licensed in the secondary sector.

Modernisation and export promotion in textile industry

Government has taken several steps to further promote textile exports through higher Cash Compensatory Support, a liberal import policy for various inputs and raw materials, and setting up 100 per cent export-oriented units in free trade zones. Indigenous production of textile machinery and import of higher technology is also being supported.

Steps have also been taken for setting up a Textile Modernisation Fund. The Standing Advisory Committee on modernisation of textile industry, constituted in September 1985, is examining the measures necessary for rapid modernisation of the industry. A nodal agency has been set up with the Industrial Development Bank of India (IDBI) as the convenor, for evolving a rehabilitation package for the sick units of the textile industry. The interest of the workers is sought to be protected through the creation of a rehabilitation fund to be financed by a cess on the industry.

Coalmine project in Andhra Pradesh sanctioned

One more coalmine project is to be undertaken in the Singareni coalfields of Andhra Pradesh. This new underground mine project, to be undertaken in Belampalli area, will be developed to meet the requirements of thermal power stations at Mettur in Tamil Nadu; Raichur in Karnataka, and some cement plants located in South India.

This project, to attain full capacity by 1990-91, will have an annual production capacity of 5.4 lakh tonnes of grade 'D' coal. The estimated capital cost is Rs. 29.78 crore In view of the infrastructure already available in the area, the coal production will start in about three years time. The estimated reserve of coal in the area is about 24 million tonnes, of which 13.70 million tonnes is estimated as extractable □

Fighting menace of adulteration

S. C. Doval

Food adulteration has assumed alarming proportion in our society. Anti-social elements are constantly engaged in finding out novel and difficult-to-detect methods of adulterating foodstuffs thus endangering the lives of the people and affecting the general health conditions of our society. In this article, the author discusses the legal, social, nutritional and medical aspects of adulteration of foodstuffs. He feels the magnitude of the problem calls for further amendment of the Prevention of Food Adulteration Act, plugging loopholes and decentralising the health services in the country.

FOOD IS ESSENTIAL for human existence on earth. The smallest unit of our society i.e., family, spends about fifty per cent of its total budget on food. Majority of our population do not get the balanced diet which is essential for good health The food purchased at high prices is generally found to be adulterated and injurious to health.

Our Constitution therefore, provides, among other things, the elimination of ignorance and ill-health and directs the state governments to raise the level of nutrition, food stuffs, public health, particularly of workers, both male and female, and of course, of children—the future citizens of our country. All men are to be provided equal opportunity and facilities to develop and live in perfect healthy surroundings.

It is in this context that Central legislation has been enacted for the prevention of food adulteration, maintenance of standards in manufacturing and selling of food stuffs for human consumption. Prevention of Food Adulteration Act 1954 is in force in our country since 1955. Adulteration of food-stuffs has been declared a crime. This means that anybody adulterating food-stuffs meant for human consumption is not merely making huge profits by unlawful means but also committing heinous crime against the society as such food stuffs are injurious to human health. The Prevention of Food Adulteration Act 1954 was enacted to protect the human health against the deceitful practices of those dealing in articles meant for human consumption.

The Act defines the duties, responsibilities and powers of the various functionaries besides the terms of adulteration, misbranded articles of food stuffs and penalties for such offences, etc.

The PFA Act 1954 was further amended in 1976. The Union Health Ministry have launched an intensive campaign against the food adulteration. The idea behind this campaign is to give wider publicity to the amended provisions of the PFA Act and to secure speedy conviction of defaulters thereby bringing about improvement in nutrition and general health of the people.

The amended Act has plugged many loopholes of the original Act. Prior to this, most of the food samples were rejected by the courts as these were tempered with or replaced subsequently

Its enforcement

Enforcement of the provisions of the PFA Act is the responsiblity of the State Governments and

local bodies, within their respective jurisdictions. Apart from the States' legislation on public health, the Central Government's PFA Act is enforced throughout the country and constitutional obligation is fulfilled. Analysis of the samples is done within ten days and the findings of the Director, Central Food Laboratory is considered conclusive and final.

Penalties

Penalty prescribed for adulterating food-stuffs, which cause injury to human health but cause no grave injury or death, is imprisonment from one to six months with a fine of Rs. 2,000 or more

In cases where adulterated food stuff can cause grievous injury to human health or death, the penalty is imprisonment from three years to life with a fine of Rs. 5,000.

Establishments and companies dealing with manufacturing and sale of food-stuff for human consumption, under the provision of the PFA Act, have to nominate persons who shall be held responsible on their behalf in case of violation of the Act.

The Central Committee for Food Standards, a statutory body constituted by the Central Government under the PFA Act, has been actively imparting its advice to the Central and State Governments from time to time in several matters These mostly relate to the prevention of food adulteration, rules covering the standards of various items of food, presence of contaminants, implementation of the Act, etc.

Food analysis

Sophisticated equipments are being made available by the Government to the laboratories for acquainting the analysts with latest technique of food analysis. The State Public Health Laboratory Pune (Maharashtra Government) and Food Research Standardisation Laboratory Ghaziabad (Directorate General of Health Services) are said to be fully equipped with Latest equipment and techniques under the WHO programme Food & Public Health Laboratories in the State will also be equipped with the most sophisticated equipment in phases.

The Central Food Laboratories are functioning in the country under the PFA Act The Central Food Laboratory, Calcutta and Standardisation Laboratory, Ghaziabad, are working under the administrative control of the Directorate General of Health Services. Apart from the legal samples and appellate work, the above laboratories undertakes investigational work in respect of standardisation and analysis of food articles. Paralysis, cholera, typhoid, blindness, cancer, tumors, leprosy and various kinds of eczema are among the various diseases caused by contaminated and infected adulterants in food stuffs and afflict millions of consumers.

To fight the evil of food adulteration the following measures can be taken.

Suggestions

1. Food articles meant for sale to the public should be regularly tested. Some of the tests are simple and can be carried out at household level.

2. The services of Sanitary|Health|Food Inspectors may be asked for.

3. Analysis of the food articles should be done in laboratories for the cost of tests is very nominal.

Adulterants

With the development of science and technology, remarkable progress has been made in food production in the recent years. Along with this have been developed various techniques of food adulteration by unscrupulous elements. Usually, the adulterants are so carefully chosen by the adulterators as to resemble a food stuff that is adulterated either in appearance or in its natural quality. The craftly selection of such an adulterant makes the task of fighting adulteration a little difficult at the family level. The aim of conducting common tests at household level should be to detect adulteration of food stuffs. But final decision should be taken only after the food stuffs are tested in a competent food laboratory.

Contamination of environ

Environmental contamination of food articles has been recently revealed all over the world. It is in this context that food contamination monitoring, surveys or studies are being undertaken by several countries of the world. The aim of such studies is to find out the extent of adverse affect that is caused by environmental contamination mainly by pesticides, metals and aflatoixin in commonly used foods.

Scientists are busy in carrying out analysis of food, maintenance and repairs of equipment, etc. used in the process. The project when completed will be able to supply data about the presence of the contaminants in different food stuffs. The work on data collection relating the presence of contaminants in food articles has already begun in almost all major countries of the world.

Our Government is doing its best to check the menace of harmful affects of various fungicides and pesticides that are sprayed over large quantities of fruits, vegetables and other food stuffs. Studies of pesticides resources in various kinds of food stuffs for human consumption are undertaken regularly and results recorded for further guidance. Every care is taken to ensure that poisonous chemicals do not pose hazards to human health and environment and the studies conducted on new types of diseases which are beyond normal cure.

Emerging new diseases

It has been realised that while some diseases can be prevented by the use of chemicals, the new and more virulent and deadly diseases are coming into existence. In our country alone, some potent poisons like DDT, BHG, endrin and aldrin are consumed by millions beyond the level of human tolerance determined by the experts. Doctors, scientists and other experts have undertaken studies to record the result of pesticides consumption in food stuffs. Pesticides affects on human brain, nerve cells, liver and interference with fertility are also being studied carefully. Scientists and experts have already found that more than thousand pesticides are used throughout the world today. In USA, UK and Sweden the use of DDT and other potent pesticides has already been banned for being great human health hazard.

Let's hope our Government will tackle the problem of pesticides in human foods in the near future. It is estimated that pests destroy our foodgrains worth over Rs. 8,000 crore annually and we are left with no alternatives but to use pesticides. It is for this reason that our production of pesticides is going up day by day. But, our scientists and experts are conscious of their responsibility and are going into the wisdom of releasing the use of massive quantities of chemicals.

Our scientists and experts have found that as soon as some diseases of human beings and plants are controlled by use of chemicals, new and virulent diseases suddenly occur. They are said to have detected streptomycin in milk due to increased use of drugs on animals. The return of Malaria in the dreaded form is cited as an example. The Government on its part is taking all necessary steps to curb the indiscriminate use of chemicals. Planners have suggested enactment of a law that would force direct consumers of chemicals such as match, paper and construction industries to take remedial measures. It is hoped that this rational proposal would be enthusiastically supported by the Government, for it is well aware of the problems of destruction of forest wealth, pollution of air, land and water Efforts undertaken in this regard are sure to show results in the years to come.

In our country although the State Governments and the Government of Union Territories have set up separate wings or directorates for implementation of the PFA Act, yet a lot of work remains to be done and stringent measures to be taken to prevent adulteration of food-stuffs at various levels viz at production, processing, storage, transportation and finally distribution. Simultaneously, short-term training courses for Inspectorate staff should be conducted periodically to acquaint them with the latest technique of inspection, sampling and analysis of the food articles.

It is, however, felt that no amount of legislation providing for stiffer penalties will suffice to curb the menace of food adulteration unless the food including the trading community, is made aware of their responsibility in the implementation of food adulteration laws.

Our nutrition experts are of the opinion that harmful additives are freely used by the manufacturers of the processed food-stuffs. It is on record that manufacturers used more than 6 grams per kilogramme of food as against the 2 grams of permitted colours. In fact, all colours used in food-stuffs are poisonous and it is always better to use them as little as possible. Almost all food-stuffs available in the market today have artificial colours like bread, butter, ice-cream, jams, colas, etc. Considerable intake of these stuffs can lead to allergies and various kinds of diseases, viz., diabetes, paralysis, cancer, intestinal troubles, hypertension, etc.

The recommendation of the Central Committee for Food Standardisation to ban the use of coaltar dyes in edible items and its acceptance by the recent State Health Ministers Conference is a step in the right direction. A proposal to treat water as food under the purview of PFA Act is of highest importance to the public.

It would, therefore, be necessary to further amend the PFA Act and effect all other consequential modifications so that the scope of the Act is extended to the remote areas of the country. To achieve the desired results, the health education work is to be undertaken through all the available media.

The magnitude of the problem necessitates the undertaking of the work for the prevention of food adulteration on a war footing. We can achieve the objectives of food production, standardisation, sanitation and prevention of food adulteration, if public health services are decentralised so that the benefits of the services rendered reach the grassroots level of our society.

Needs to conserve energy

The country would need between 560 and 600 billion kwh power by 2000 A D. A quantum jump will, therefore, be necessary to install a capacity of about 1,20,000 MW by 2000 A.D. as against the present installed capacity of nearly 50,000 MW.

The urban areas, with a share of population of only about 24 per cent, are consuming as much as 80 per cent of the commercial energy. Commercial energy, consisting of coal, oil and power, accounts for over half of the total energy used in the country, the rest coming from non-commercial sources like cow-dung, fuelwood and agricultural wastes. Bulk of the non-commercial energy is used in the rural areas.

An inter-ministerial working group on utilisation and conservation of energy has concluded that there is scope for effecting savings of the order of 20 per cent, 25 per cent and 30 per cent in transport, industry and agriculture sectors respectively through the adoption of short and medium term measures for more efficient use of energy.

Ageing and role of hormones

Dr. Vinod Kumar

Ageing still remains an intriguing issue before the scientists. Hormones play an important role in the process of ageing. Their imbalance leads to a number of diseases in the adults, specially among the elderly. In this article the author highlights the role of hormones in the process of ageing and old-age diseases. He says the best way to overcome these diseases is to follow the time-honoured values like balanced diet and avoiding sedentary habits, smoking and drinking.

THERE IS A GREAT CONCERN for the care of elderly people in several developed nations and a number of programmes are available there to meet their multi-faceted problems in health, psycho-social and economic spheres. In medical field, the concerned discipline known as Geriatric Medicine is a part of educational syllabus in most of the medical institutions where doctors are imparted the necessary training. Simultaneously, researchers have taken up the challenge of investigating ageing and its mechanism in their laboratories. Consequently a sizeable portion of health budget is utilized for the welfare of the aged people. Proportion of population over 60 years of age is on the increase everywhere. In advanced countries, they will grow from current 17 per cent to 22 per cent in the year 2025 AD. In our country, presently around 40 million Indians (6 per cent of the population) are above 60 years of age and this figure will increase to 13 per cent by 2025. In absolute numbers, they are going to become 4 times in next 40 years and India will continue to have second biggest population of old people.

Process of becoming old has attracted man's attention since time immemorial. Technological advances have helped scientists study the mechanism of ageing and based on their findings attempts have been made to prolong the period of physiological competence and delay ageing.

Several theories have been enunciated to explain why we age. For instance, biological theory of ageing which stresses the importance of genetic or environmental factors as responsible for ageing, has held the ground for long. In this article I would be dealing with the *science of hormones* in relation to ageing and their disorders in elderly people.

Role of hormones

Hormones are important substances that are formed by certain parts of human body known as the endoorine or ductless glands. They are essential for sustaining life because they are responsible for our growth, development, metabolism, reproduction and behaviour and are necessary for coordinating the activities of various organs in the body.

Brain is the vital organ that controls hormone production by various glands. More precisely, a structure called *hypothalamus,* situated in the brain, is the master of hormone orchestra It secretes and sends out chemical substances called *'release hormones'* to its assistant situated at a slightly lower level in the brain, known as *pituitary gland.* This gland in turn produces a number of hormones grouped under the *trophic hormones,* each of which controlling a specific hormone producing ductless gland situated at the periphery in our body. These peripheral glands virtually act as slaves to their master hypothalamus and assistant pituitary pair and secrete hormones under their instructions. These glands are : thyroid, adrenal, tests and ovary ; secreting their respective hormones.

In addition, growth of our bones and muscle, milk secretion from the breast and insulin secretion from our pancreas are also partly totally dependent on this system. These hormones are capable of exerting their specific actions for fulfilling the various functions either gradually (e.g., growth promoting action) or in response to sudden demands arising either from inside the body or from external environment. The system is set in such a way that even a slight excess of hormone of a peripheral gland can put an immediate stop to its whipping by its master in the backward direction. Thus in health, the peripheral gland acts as an intelligent servant and knows when to obey and when to even guide its master. Hormone production is, therefore, a well regulated and controlled process.

Theory of ageing

The theory of ageing that incriminates hormones propounds that the functional capacity of hypothalamus to direct hormone production is like an ageing clock which is so programmed as to determine the sequence of events right from the time of fertilisation. In other words, this hormonal capacity proceeds in regulated steps like a pace-maker to determine our progress from childhood through adulthood, middle age and finally to old age. One of the hallmarks of our entire life time's hormone regulation is reproductive decline that occurs in women around the age of 45 resulting in stoppage of menstruation, called *menopause*, and a similar decline that occurs in ageing men (but more gradually and less severely than women). At least in females, deficiency of sex hormones that resultst in this event is clearly favourable to ageing in the form of increased risk of degenerative heart disease and cancer.

Another explanation to account for hormonal changes in senescence is the breakdown of brain's regulatory centres that normally control hormone production. Yet anothetr explanation is the increasing deficiency of brain's neurotransmitters and hypothalamic release hormones, resulting in altered catecholamine metabolism and deficiency of pituitary hormones, both of which then causing secondary ageing changes. Whatever the hormonal explanation may be the fact remains that ageing is attained by gradual but significant decline in the secretory reserve of thyroid adrenal cortex, testes, ovary and growth hormones. Sex-relatetd trophic hormones of pituitary, however, show a secondary rise due to depressed hormones of testes and ovary. Opinions on status of prolactin secretion with ageing seems contradictory and divided.

Before we now turn our attention to a brief discussion of hormone-related diseases that occur in elderly persons, it will be pertinent on my part not to create an impression that ageing is all due to hormonal deficiencies. This is not so. There are other factors too contributing to this phenomenon. Disabilities and diseases acquired during life also have their role in ageing process. Further, other systems of human body are also undergoing senescence changes.

Hormone-related diseases

With the background knowledge of hormones already illustrated, let us now turn our attention to some common hormonal diseases, some of which can be seen in adults also but may present unusual features in the elderly. Moreover, some diseases may be unique to advancing age :

1. Male Sexual Disorders in ageing individuals are usually slow to develop and may take on the form of declining sexual performance and gradual decrease in fertility potential. There are only uncommon examples of children born to men above the age of 65 to 70 years. Reasons for declining sexual performance in elderly males are not, however, entirely hormonal because basal concentration of their sex hormone (or the testosterone) level may be normal. Psychogenic overlay, weakness of local nerves and general fatigue appear to be equally important and need to be adequately looked after .

2. In the fermales, reproductive decline occurs around 45 years of age and rather more rapidly to a point of virtual cessation when compared to males. This manifests as menopause in the middle aged woman, sometimes accompanied by upsetting symptoms of hot flushes, sweating and palpitation which can be wrongly interpreted as due to neurosis. Replacement of the missing female sex hormone (or the oestrogen) appears plausible but it is usually not resorted to by doctors due to serious side effects and complications. There are some specific ways of treating this. Another effect of oestrogen deficiency in females is the gradual bone loss called osteoporosis in which ageing process by itself and poor nutrition may also be contributing factors. Only in advanced cases do the patients develop significant bone pains and compression fractures.

3. Thyroid dysfunction is of special importance because certain characteristics of thyroid deficiency are also the features of old age such as sluggishness, dry skin, cold intolerance and accelerated fat deposits in their blood vessels. Laboratory tests in ageing ordinarily do not show florid changes in thyroid hormone's concentration except some compromise in their secretory reserve. If an elderly person gets into an actual hypothyroid state, usually the dose of thyroid hormon required by him is about 30 per cent lower. With regard to hyperthyroidism, it is perhaps less common in elderly but when it does occur, the effects are atypical and demand special diagnostic expertise. There is some evidence also in favour of hyperthyroidism as a factor that promotes ageing

4. Disorders of adrenal gland are not specially common in elderly people. However, the apparent importance is the impression created that because our elderly people are not as able as young are to adjust to stresses and tensions they may have the deficiency of adrenal hormones which have a special role to play in combating stresses. Hypothalamo-pituitary-adrenal is a life support axis and can influence certain behavioural functions and also take active part in our interaction with external environment. Only marginal alterations in the secretion pattern of these hormones have been reported with ageing. However, a hormone called *norepinephrin* which comes from the inner part of adrenal gland is increasingly being attributed to certain features of ageing.

5. Disorders of behaviour, sleep and depression : New exciting areas of research have shown hormonal basis to abnormal sleep patterns and wakefulness in elderly persons. A high level of night time norepinephrin is often incriminated in certain sleep disturbances. Then these disorders have been shown in isolated reports to have abnormality of certain other hormones like prolactin, cortison, etc., but their exact significance is unknown.

6. Glucose intolerance and diabetes mellitus : One of the hallmarks of advancing age is an inability to tolerate a load of glucose ingestion, an abnormality also seen in the common variety of diabetes. For this and other reasons, diabetes even if occurring at earlier ages is sometimes considered to be a process of accelerated cell ageing. In any case, this inability to utilise glucose biochemically in the body is associated with degenenerative changes in heart and arteries which are some of the indices of ageing. Diabetes being a common disease needs few lines of discussion. Essentially it is considered to be due to deficiency or inaction of a hormone called *insulin* secreted by a gland called *pancreas*. Presuming that diabetes is at least partly a reflection of premature ageing, we have certain dietary and pharmacological manipulations available that can control diabetes and possibly delay ageing.

7. Hormone related Cancers : We will briefly mention here the role of hormones in respect of cancers of prostate, uterus, ovary and the breast.

8. Bone loss due to ageing.

9. Loss of water and salt balance in the elderly.

What's to be done

Much has been said about the causation of ageing and role of hormones in certain diseases of geriatric practice. Perhaps, while making generalisations, one could stress the importance of time-honoured values such as intake of balanced diet, avoiding sedentary habits, smoking and liquor. These are at least some established factors which contribute to keeping you fit and healthy for a longer time, which is the ultimate aim of entire human race. Scientists will have to work with public educationasts. We can now only extend the intricate scientific explanations for relatively simple but valuable habits practised for centuries. Nevertheless, scientists are at work at a much more fundamental level to identify means to delay ageing, e.g., repairing the ageing clock, etc. □

(Courtesy : All India Institute of Medical Sciences)

Three million more to benefit from new nutrition programme

The Department of Women's Welfare and Child Development has launched a new scheme of *wheat based nutrition programme* for school children and nursing/expectant mothers during 1986. An additional three million beneficiaries will be covered under the Scheme by the end of 1986-87, for which Rs. 45 crore have been earmarked.

During 1985-86, the number of Integrated Child Development Services (ICDS) projects rose to 1358. Of these, 1229 projects were Centrally Sponsored and 129 in the State sector ICDS projects, specially in the backward rural areas, tribal areas and urban slums. Under the ICDS projects about 2 lakh children are being looked after through 8,000 creches. About 200 additional ICDS projects are proposed during 1986-87. International agencies like UNICEF and NORAD (Norwegian Agency for Development) are actively providing all the assistance in the form of consultancy services, training, communication, supplies, equipment, monitoring, research and evaluation, etc. □

(Continued from page 8)

Table 5

Land price in relation to value productivity in Punjab, 1975—1984

Year	Per acre land prices*(Rs) At current Prices	At constant prices	Index	Per acre value productivity (Rs.) At current prices	At constant prices	Index
1975	13000	13000	100.00	1100	1108	100.00
1976	16000	16316	125.51	1296	1322	119.31
1977	14000	13275	102.12	1472	1396	125.99
1978	20000	19005	146.19	1578	1500	135.38
1979	20000	17027	130.98	1668	1420	128.16
1980	23000	16297	125.36	1911	1354	122.20
1981	22000	13892	106.86	2341	1478	133.39
1982	23000	14172	109.02	2581	1590	143.50
1983	32000	18271	140.55	2663	1520	137.78
1984	35000	18097	139.21	.	..	..

Source: *Ibid table 4. □

Whole body CT Scanner at AIIMS

All India Institute of Medical Sciences New Delhi has acquired a very sophisticated computerised Whole Body Scanner. It can be used for imaging any abnormality in the body resulting in an extra growth or causing a void in the body. Such abnormality may fall in any of the four categories namely. congenital, inflammation, trauma or neoplastic changes. This can scan any minute part in the body, including the head.

This is one of the latest and most sophisticated Whole Body CT Scanners now available in the capital. Already such scanners have been functioning at G. B. Pant Hospital, Sir Ganga Ram Hospital and Delhi Scan Research Centre. With optimum use, the CT Scanner can handle 8—10 patients every day. The Institute has decided to charge Rs. 750|- from the patients registered at the AIIMS Hospital, Rs. 1000|- from the patients admitted into the Paying Ward rooms and Rs 1500|- from the patients referred from outside □

Sanitation facilities in rural areas

An integrated programme for construction of sanitary latrines in rural areas has been launched as a part of the Seventh Plan. Five lakh sanitary latrines will be constructed under the National Rural Employment Programme (NREP) and the Rural Landless Employment Guarantee Programme (RLEGP). The programme also provides for sanitary latrines in one million houses to be constructed for Scheduled Castes and Scheduled Tribes under the Indira Awaas Yojana

Sanitary latrines are also to be constructed in village institutions like anganwadi health sub-centres, schools, panchayat ghars, etc Health education among rural population is to be undertaken to promote and develop the sanitary latrine facilities in the rural areas.

The programme is being implemented with a view to help improving sanitation facilities and the quality of life in the rural areas. □

400 Central schools to be opened by 1990

It has been decided to open 400 new Kendriya Vidyalayas (Central Schools) during the four years period beginning 1986. Till 1985-86, 540 Kendriya Vidyalayas were functioning. During the current financial year, 100 additional Central Schools are proposed to be set up with an estimated expenditure of Rs. 38 crores.

Out of the existing 540 Kendriya Vidyalayas, 114 schools are under the project sector, 272 in Defence sector and 154 are in the civil sector. The medium of instruction is English for Science & Mathematics and Hindi for Social Sciences.

Price support for safflower

Price support has been extended to safflower. The minimum support price of fair average quality of safflower has been fixed at Rs. 400 per quintal for the 1985-86 crop to be marketed during 1986-87. This has been done in pursuance of the policy of the Government of fixing minimum prices of important oilseeds like groundnut, soyabean, sunflower seed, rapeseed and mustard to encourage their indigenous production. The National Agricultural Cooperative Marketing Federation (NAFED) has been designated the agency for undertaking market support operations for safflower. □

Poor housing facility in industrial sector

Yojana Correspondent

HOUSING FACILITY in industrial sector is very poor. The percentage of employees provided with accommodation comprising all industries is 9.8 per cent. This is contained in the latest and Eighth Annual Survey of Housing in industrial sector for 1981-82 undertaken by National Building Organisation of the Union Ministry of Urban Development. The survey deals with the contribution of employers to the housing in all industries.

According to the survey, the total housing stock (tenements) during 1981-82 were 6 05 lakhs in the industrial sector. About 368 industrial establishments contributed for construction or purchase of tenements during the year The number of tenements completed and purchased were 15,776 and tenements under construction were 9,018.

The survey states that the all India average cost of construction of all types of tenements was Rs. 20,220 per unit during 1981-82. The total investment made during the year for construction and purchase of tenements was Rs. 470 million.

In addition, the report discusses in brief the linkages between the industrial characteristics in terms of contribution by type of ownership, capital size, employment size of the industry with the housing parameters like addition to the stock, size of tenements, investment in residential land and buildings, source of finance, etc.

Objectives

The broad objectives of the survey are to study the annual addition to the housing stock by industries in various states and the expenditure incurred by the employers on the tenements constructed and purchased. The other objectives are to undertake cumulative housing stock up to the end of the reference year and study sources of financing the investmnet (expenditure incurred).

Coverage of industries

Almost all types of industries in the manufacturing and services sectors are covered by the survey. The ownership of industrial establishments covers wholly Central Government, wholly State|Local government, wholly private enterprises, Central|State|Local government, joint sector (private) and joint sector (public). The survey extends to all states and Union Territories except Sikkim and Nagaland. It covers all such factories that are registered under the Factories Act, 1948, employing 50 or more workers with the aid of power and 100 or more workers without the aid of power. The non-census sector has also been included from 1973-74 by adopting the method of rotation and surveying one half of the units each year so that all factories are covered once in two years.

Background

The National Building Organisation (NBO) as a national coordinating agency is engaged in making consistent efforts for the improvement in developing the system of housing and building statistics, which are a pre-requisite for a sound and effective housing policy and planning. At the instance of NBO, the National Sample Survey Organisation (NSSO) has been collecting information since 1968 on housing construction by the employers for their employees in the industrial sector under Annual Survey of Industries. The data so collected are processed, tabulated and analysed in the National Building Organisation and published in the form of annual reports. The survey reports are intended to be useful to industrial planners, statisticians, economists and research scholars □

A model school for each district

THE CENTRE has decided to open one model school (Navodaya Vidyalaya) in each district of the country during the Seventh Plan period. The States/Union territories have been requested to identify suitable land and buildings for starting the schools.

The broad aims for establishing model schools are :

> to serve the objectives of the equity and social justice; promote national integration; provide opportunities to the talented children to develop their full potential; and facilitate the nation-wide programme of school improvement.

The admission to these schools will be at the sixth standard level. At a suitable stage of study it is intended to have at least 20% children in each of the model schools from a different language speaking region. This will help improve understanding among young people of the language, customs and the milieu of other regions of the country. Hindi and English will be the media of instruction in all these schools. However, a modern Indian language will also be taught as a third language as envisaged in the three-language formula.

Education in model schools, including boarding and lodging as well as the expenses on uniform, text-books, stationery, rail/bus fare from and to the homes, etc., will be free for all.

All the schools will be affiliated to the Central Board of Secondary Education (CBSE), The national core curriculum, when developed, will be implemented in these schools which will be co-educational and residential. Hostel facilities will be provided to all children. The schools will have adequate laboratories and modern aids to education like radio, television and micro-computers.

Recruitment of teachers to these schools will be made on all-India basis, and the teachers will be transferable from one school to another. In-service training courses for these teachers will be organised in institutions like Regional Colleges of Education managed by the NCERT. □

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Better cattle, more milk—Seventh Plan strategy

SEVENTH PLAN SEEKS to achieve an annual production of 51 million tonnes of milk against the base level production of 38.80 million tonnes in 1983-84. This would imply an annual growth rate of 5.6 per cent.

Efforts will be made to bring at least 25 million cows under the cross-breeding programme. Schemes to improve various breeds of cows and buffaloes will also be undertaken alongwith inputs like production of high-merited breeding bulls, adequate and scientific feeding, provision of livestock health facilities and modern management practices.

The work on embryo transfer technology will be taken up for the first time in the country during Seventh Plan to bring quick improvement in the genetic structure of the animals. The programme of progeny testing of cross-breed bulls under field conditions would continue and extended to all the states.

The Plan document observes that more than 50 per cent of the milk production is contributed by buffaloes. Efforts will be made to select and multiply superior buffalo germplasm through establishment and strengthening of large buffalo breeding farms. Work on setting up a Buffalo Research Institute at Hissar, Haryana, has already been initiated by ICAR. This Institute is likely to be completed during the Seventh Plan. □

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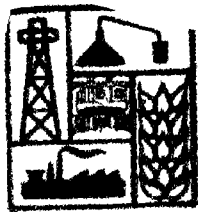
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Bank nationalisation anniversary

yojana

JULY 16—31, 1986, RUPEES 1.50

Challenges facing public sector banks

NEXT ISSUE

August 15 special

Exploiting fishing potential during Seventh Plan

INDIA HAS VAST POTENTIAL of fishing in both inland and marine sectors comprising 2.02 million sq. km. EEZ (Exclusive Economic Zone), 7,517 km. of coastline, 2900 km. of rivers, 1.7 million hectares of reservoirs, 0.902 million hectares of brackish water areas and 0.753 million hectares of tanks and ponds. Fish production recorded a growth rate of 3.1 per cent per annum during the Sixth Plan. Generally speaking fish production from inland waters in India is showing better performance than in the marine sector because of the introduction of scientific fish farming.

During the Sixth Plan, emphasis was laid on inland fisheries to increase additional fish production by fish farming. This resulted in increasing inland fish production from 848 thousand tonnes in 1979-80 to about 1,100 thousand tonnes in 1984-85. However, in the marine sector the progress was slow during the Sixth Plan period. One of the main reasons for this was that against the target of introduction of 200 deep sea fishing vessels to exploit the EEZ resources, only 75 vessels could be introduced.

During the Seventh Plan, the main thrust will be on exploitation of EEZ by promotion of investment in deep sea fishing, specially to harvest resources beyond 40 fathoms. For coastal fishing, besides introducing new motorised and mechanised fishing craft, attempts will be made to expand diversified coastal fishing. Maritime Zones of India (Regulations of Foreign Fishing Vessels) Rules, 1982 will be strictly enforced to eliminate conflict between the mechanised boat operators and traditional fishermen. □

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Bank nationalisation and after

J. S. Varshneya

The pace of development of banking since nationalisation of 14 major banks in 1969 has been phenomenal, says the author. There has been over six-fold rise in the number of branches, eighteen-fold growth in bank deposits and fifteen-time increase in their advances. He describes their achievements as commendable despite various constraints like inadequate infrastructural facilities, lack of trained man-power and non-availability of suitable premises in rural areas. The author here highlights the achievements of the nationalised banks in various sectors of economy

TRADITIONALLY, COMMERCIAL BANKS in India were urban based, profit-oriented and generally not responsive to the requirements of the community. The branch network had a strong urban bias with consequent inadequate coverage in the rural areas. Deposits of the banks had increased but bulk of the increase was accounted for by the developed states. At the same time, the bank lendings were urban-oriented and concerned mostly with organised industry and trade with the result that the other sectors of the economy were dependent upon non-institutional agencies for their requirements of finance. The banking facilities were also beyond the reach of the vast number of economically weaker sections of the society. All this resulted in lopsided development of the banking system and necessitated nationalisation of banks.

Bank nationalisation

The nationalisation, on July 19, 1969 of the 14 major Indian Scheduled Commercial Banks in the private sector, each having deposits of Rs. 50 crores or more as on the last Friday of June, 1969, was an important landmark in the history of Indian banking. The main objectives of the nationalisation were "to control the commanding heights of the economy and to meet progressively, and serve better, the needs of development of the economy in conformity with national policy and objectives" In her broadcast to the nation, Smt. Indira Gandhi, the then Prime Minister, outlined the objectives of nationalisation as :

(i) Removal of control by a few,

(ii) Inculcating banking habits among the masses,

(iii) Minimising regional imbalances and avoiding lopsided development,

(iv) Carrying the banking to hitherto unbanked|underbanked areas,

(v) Giving a professional bent to bank management,

(vi) Encouragement of new classes of entrepreneurs, and

(vii) Providing adequate credit for the neglected sectors such as agriculture, small scale industry, small business, transport, etc.

On April 15, 1980 six more private sector banks, each with deposits of not less than Rs. 200 crore, were nationalised, extending further the area of control over the country's banking system.

Rapid strides

Since seventies, banking industry has made commendable progress in achieving the objectives of

nationalisation and has slowly but steadily moved on as an agent of socio-economic development. The shift from class banking to mass banking has changed the facet of the entire banking industry. Banks are no longer urban-based and profit-oriented commercial organisations. There has been rapid transformation in the industry with regard to branch expansion, lending to priority sectors, lending in rural|semi-urban areas and such other parameters. Rapid strides have been made in the regeneration of the rural economy through bank assistance. Though these unconventional tasks did result in additional burden on the banking industry, yet banks have shouldered these additional responsibilities with exemplary adaptability. The progress made by banks since nationalisation is detailed below :—

Branch expansion

Soon after nationalisation, commercial banks launched a massive branch expansion programme with a view to carrying banking to unbanked|under-banked areas and thus reduce regional imbalances. The total number of branches of scheduled commercial banks increased from 8,262, in June 1969 to 52,013 in September, 1985. Of the total number of 43,751 new offices opened, 26,200 or 60 per cent were opened in unbanked centres. Further, 80 per cent (35355) of the new offices were opened in rural and semi-urban areas. As a result, 59.0 per cent of the total branch network of the scheduled commercial banks caters to rural areas as against 22.2 per cent in June, 1969.

In view of the massive branch expansion since nationalisation, the population covered by each branch has gone down from 65,000 persons per branch in June, 1969 to 13000 persons per branch in September, 1985. Population groupwise, the details of number of offices of scheduled commercial banks are even below:—

Branch Expansion of Commercial Banks by Population Group

	June 1969		Sept. 1985		Increase	
	No.	Per cent to total	No	Per cent to total	No.	Per cent to total
Rural	1832	22 2	30664	59 0	28832	65 9
Semi-urban	3322	40 2	9845	18 9	6523	14 9
Urban	1447	17 5	6230	12 0	4783	10 9
Metropolitan	1661	20 1	5274	10.1	3613	8 3
TOTAL	8262	100 0	52013	100 0	43751	100 0
Average population per branch ('000)	65		13			

Regional Rural Banks

While the commercial banks were opening branches in rural areas in a big way after nationalisation, it was still felt that they were not suitable to deliver the goods in the villages. Hence, a committee on rural banks headed by Mr. M. Narisimham suggested a new system of banking to be sponsored by the public sector banks in rural areas. Accordingly, Regional Rural Banks, whose operations are restricted to the geographic area of one or two districts, were established in different areas. These banks combine in them the local feel and familiarity with rural problems which cooperatives possess and the degree of business organisation, ability to mobilise deposits, access to central money markets and a modernised outlook which the commercial banks have. Each RRB is sponsored by a public sector bank and provides credit and other facilities to the small and marginal farmers, agricultural labourers, artisans and small entrepreneurs in rural areas. At the end of April, 1985, 183 RRBs had been established in 322 districts of the country. These RRBs have been playing a commendable role in providing credit and other banking services to the rural areas by opening large network of branches. At the end of December, 1984, 173 RRBs had 10,245 branches. The deposits and advances were Rs. 960 crores and Rs. 1081 crores respectively.

Deposit growth

In view of massive branch expansion and introduction of attractive deposit schemes tailored to the need of every section of population and each type of depositor, the aggregate deposits of scheduled commercial banks increased from Rs. 4665 crores in June, 1969 to Rs. 83721 crores in December 1985—around 18 times increase. The number of deposit accounts increased from 3.49 crores in December 1972 to around 24 croree in December 1985. Further, following the massive thrust into the rural hinterland, the growth of deposits in rural areas has been much faster than that of total deposits. Rural deposits increased by more than 68 times between June 1969 and March 1985. Consequently, the share of rural deposits in total deposits increased from 3.1 per cent in June 1969 to 13.6 per cent in March 1985. Thus, there has been appreciable increase in bank deposits, which constituted 42 per cent of national income in 1984-85 as compared to 15 7 per cent in 1968-69.

Credit diversification

Total credit of the banking system increased from Rs. 3609 crore in June 1969 to Rs. 53231 crore in December 1985, an increase of around fifteen times. In addition, banks have provided strong support to the development plans by increasing investment in Government and other approved securities. Investment in Government and other approved securities increased from Rs. 1359 crore in June 1969 to

Rs. 29963 crore in December 1985. Vigorous efforts were made by commercial banks to boost rural lending during the post-nationalisation period. As a result of which, rural lending which had a meagre share of 1.5 per cent of total bank credit, have over the years increased to 13.1 per cent.

During the post-nationalisation period, one of the most significant features of credit expansion has been the striking transformation in the sectoral distribution of bank credit in favour of the sectors and areas which had limited access to banking facilities before. There has been a decline in the share of medium and large industries in the total bank credit and simultaneous increase in the share of agriculture, SSI and other non-traditional segments. The details are given below:

Sectorwise distribution of Bank Credit

(Rs crores)

Sector	March, 1968		March, 1985	
	Amount	Per cent to total	Amount	Per cent to total
I **Industry**	**2068**	**67. 5**	**22556**	**47 0**
Large & Medium	1857	60 6	15948	33 2
Small Scale	211	6 9	6608	13 8
II **Agriculture & allied activities**	**67**	**2 2**	**7657**	**16 0**
III **Trade**	**588**	**19 2**	**8478**	**17 7**
Food	109	3 5	5827	12 2
Others	479	15 7	2651	5 5
IV **All others**	**341**	**11 1**	**9262**	**19 3**
TOTAL	3064	100 0	47953	100 0

Credit to priority sectors

Since nationalisation, a considerably large number of agriculturists, small scale industrialists, transport operators, retail traders, small businessmen, professionals|self-employed persons and other small borrowers have been brought under the purview of organised monetary fold. Credit to priority sectors by the banking system increased from Rs. 441 crores in June 1969 to Rs. 19208 crores in September 1985. As per cent to total credit the same increased from 14 per cent to 42.7 per cent during the same period. The number of priority sector loan accounts had also reached 229.27 lakhs in September 1985 as against barely 2.6 lakhs in June 1969. The following table gives the details:

Advances by Public Sector Banks to Agriculture and other Priority Sectors

(A/cs in '000)
(Amt: Rs. crores)

	June 1969		September 1985	
	A/cs.	Amount	A/cs.	Amount
1 Agriculture	164	162 33 (5 4)	15176	8174.30 (18.2)
2. —Direct	160	40 21 (1 3)	14168	6799.35 (15 1)
—Indirect	4	122 12 (4. 1)	1008	1374.95 (3. 1)
3. Small Scale Industries	51	251 07 (8 3)	1488	6803.24 (15.1)
4 Others	45	27 57 (0 9)	6263	4230 66 (9.4)
TOTAL	260	440 97 (14 6)	22927	19208 02 (42 7)

Figures in brackets indicate per cent to total credit.

Innovative schemes

With a view to meeting the varied objectives of nationalisation, the banking industry made a dynamic endeavour to formulate various innovative credit schemes aimed at developing the necessary infrastructure coupled with reorientation of approach to lending from asset base to project base. Some of the specific schemes|programmes launched are briefly mentioned below.—

Lead bank scheme

To demarcate the responsibilities of individual banks in developing banking infrastructure and providing financial facilities the Lead Bank Scheme was evolved, in terms of which all districts excluding the metropolitan cities were allotted to different banks. The Lead Bank is not expected to have any monopoly of banking business but it is the leader of a consortium of banks and other financial institutions in promoting the development schemes in coordination with various agencies of Central and State governments.

Village adoption scheme

Village adoption scheme was conceived as a special programme of intensive rural financing by banks and other agencies and thus developing the rural economy in all its aspects in a phased manner.

As at the end of June, 1983, banks had adopted 1,41,042 villages and financed 5 million direct agricultural loan accounts involving a total amount of Rs. 1557 crore.

Self-employment of educated unemployed youth

The scheme for providing Self-employment to Educated Unemployed Youth (SEUY) launched in

1983 was formulated by the Government of India in consultation with the Reserve Bank of India. The main objective of the scheme was to minimise the incidence of large scale unemployment among the educated unemployed youth by providing them with means to undertake self-employment ventures in industry services and business through the provision of a package of assistance.

During 1983-84, it is estimated that total loan amounting to Rs 401.54 crore was disbursed to 2.42 lakh beneficiaries. According to the latest available date, during 1984-85 banks had sanctioned loans aggregating to Rs. 428.53 crore to 2.29 lakh beneficiaries. Public sector banks accounted for more than 95 per cent of the total amount sanctioned.

Entrepreneur Development Programmes

With a view to motivating first generation entrepreneurs to set out risk bearing ventures particularly in backward districts, special entrepreneur development programmes highlighting opportunities and providing basic input in industrial management are organised by banks. State Bank of India which has been conducting these programmes since 1976 has been a pioneer in this field. Upto 1984, SBI had conducted 95 such programmes covering 2200 entrepreneurs. 22 per cent of the trained candidates have set up industrial units and 17 per cent are in the process of preparation of project reports. The candidates trained are being followed up through quarterly follow up meetings held for a period of 18 months after the conduct of the relative programmes.

Anti-poverty programme

In consonance with the national economic policy, commercial banks have been extending financial support on an increasing scale for the implementation of various poverty alleviation programmes including Integrated Rural Development Programme, Differential Rate of Interest Scheme, etc. The shift in lending towards these sectors is part of the effort to shift the emphasis from a security oriented approach to a purpose and production oriented approach. A brief outline of the various schemes is given below :

Integrated Rural Development Programme

The Integrated Rural Development Programme has been under implementation since 1978-79 to assist the families living below the poverty line. Initially it was launched in 2300 blocks of the country but from October 2, 1980, it had been extended to all 5011 blocks in the country. The programme envisages provision of assistance by way of credit, technical assistance including training, supply of inputs and marketing facilities to the identified families for starting any viable and income generating activity in primary or ISB (industries, services and business) sector.

The definition of poverty line in terms of annual income of a family has been recently revised from Rs. 3500 to Rs. 6400 per annum. However, the cut off point for identification of families for assistance would be Rs. 4800 per annum and the families will be assisted to reach an annual income of Rs. 6400.

During the Sixth plan period, it is estimated that 16.55 million families were provided assistance against a target of 15 million families. The total credit disbursed through this programme is estimated at Rs. 3,100 crore as against the target of Rs. 3,000 crore. Total investment in the programme is estimated at Rs. 4762 crore in relation to the initial target of Rs. 4500 crore.

Differential interest

With a view to assisting the weakest among the weak the Differential Rate of Interest Scheme was introduced by Public Sector Banks in 1972. Under this scheme, financial assistance is provided by banks at a concessional rate of interest of 4 per cent per annum for starting any income generating viable project. The eligibility criteria for credit under DRIS stipulates that annual income of a person from all sources should not exceed Rs. 2000 in rural areas and Rs 3000 in other areas. Initially, banks were directed to advance 0.5 per cent of their total credit under DRIS which was subsequently raised to 1 per cent.

Public sector banks have made notable progress in respect of their lending under DRI scheme Between December 1972 and September 1985, the number of loan accounts went up from 26,000 to 42.96 lakhs and loans outstanding from Rs. 87.3 lakh to Rs. 465.72 crore, representing 1.1 per cent of total advances of the previous year, as against the target of 1 per cent. The average amount of loan per account also increased from Rs. 335 to Rs. 1084. The share of rural and semi-urban areas constituted 73 per cent of the total DRI advances as against the norm of 66.67 per cent. There has been a significant improvement in the coverage of scheduled caste|tribe borrowers whose share in the DRI credit stood at 50.8 per cent against the national goal of 40 per cent.

Credit to weaker sections

The weaker sections comprise small and marginal farmers, landless labourers, tenant farmers and share croppers, artisans, village and cottage industries, beneficiaries of IRDP and DRI and scheduled castes| tribes.

As at the end of September, 1985 public sector banks' credit to weaker sections amounted to Rs. 4410 33 crore to 159.58 lakh borrowers constituting 23.0 per cent of the total priority sector credit or 9.8 per cent of the total advances.

Thus, the pace of banking development since the nationalisation of 14 major commercial banks in 1969

(contd. on page 12)

युवा वर्ग के समग्र विकास एवं स्वर्णिम भविष्य हेतु
वार्षिकांक
प्रतियोगिता दर्पण
अगस्त १९८६ के वार्षिकांक से गौरवपूर्ण नवम् वर्ष में प्रवेश
इस अंक के विशेष आकर्षण
■ विश्व एव भारत ज्ञानकोश
■ गत 12 माह के अको का सार सक्षेप
■ सम्पूर्ण वर्ष की राष्ट्रीय एव अन्तर्राष्ट्रीय घटनाओ का सक्षिप्त विवरण
■ वर्ष भर के पुरस्कार, प्रमुख चर्चित व्यक्ति एव चर्चित स्थान, खेलकूद
■ विविध प्रतियोगिता परीक्षाओ मे सम्बद्ध हल प्रश्न पत्र
■ वित्तीय वर्ष की आर्थिक समीक्षा, राष्ट्रीय शिक्षा नीति विषयक लेख, 21वी सदी का भारत-एक परिकल्पना, ज्ञान-वर्द्धक-विविध तथ्य, कृषि, विज्ञान, प्रतिरक्षा व आर्थिक विषयो पर निबन्ध
■ युवाओ के लिये विशिष्ट सामग्री, रोजगार समाचार व
सभी स्थायी स्तम्भ.
आकर्षक मुखपृष्ठ सामग्री का भण्डार
प्रतियोगिता दर्पण
हिन्दी मासिक
प्रतियोगिता दर्पण
२/११ ए. स्वदेशी बीमा नगर
आगरा–२८२००२
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Challenges facing the public sector banks now

Kamal Nayan Kabra

The author here says the structural imbalances that persist and worsen in our system indicate that planning in general and banking operations in particular have helped objectively, even if not purposively, to accelerate the development of capitalism. The public sector banking could not become, he feels, qualitatively different from private banking. According to him the main challenge today is to effectively use these banks as instruments of macro economic management for curbing inflation and to determine the pattern of investment according to social objectives.

NATIONALISATION OF COMMERCIAL BANKS has been viewed in a number of different perspectives. As a result of over a quarter century of operation of the commercial banking system under the direct control and ownership of the state a number of important changes have taken place. It is tempting to suggest that the changes owe themselves to change in the ownership of the banking system. In a strong form, it may turn out to be a simplistic view. During the same very period many other processes have been at work; a number of other things being more important and, in a certain sense, autonomous of the changes in the sphere of banking. In social spheres it is not always very easy to determine the direction and origin of causation. What is plausible and significant is to maintain that the nationalised banking system has been associated with the changes and may well be claimed to have facilitated a number of these changes. This would become apparent on the basis of a comparison of the functioning of the banks in relation to the national economy during the period 1947 to 1969 and the period 1969 to 1986.

Bank nationalisation, why?

Before one comes to devote some attention to the changes contributed to and facilitated by the banking system after nationalisation, it is important to make one point clear. Any important social decision, for instance, like that of nationalisation of banks at any given moment of time, owes itself to number of social and economic factors. It is a combination of these factors which may be said to determine the objectives sought to be achieved by the decision makers. In the period immediately following such a momentous decision, for a certain length of time these objectives may have a kind of overriding value. But the question is whether these vary factors remain valid for a much longer period of time, particularly in view of the fact that not only the objective circumstances change but also owing to the activisation of a number of other social processes now needs, pressures, instruments and perceptions come into existence.

Specifically in the context of nationalisation of banks intended, it can be argued that the compulsions of financing the credit needs of Indian agriculture in the wake of the Green Revolution was a very material factor which made the nationalisation of banks possible. In order to mobilise savings of the economy by taking banks to a large number of unbanked areas it was essential that the geographical coverage of banks must greatly expand This expansion of banks branches was to mobilise resources, facilitating credit creation, capable of meeting the financial intermediation needs of agriculture without

drying up credit resources for the expanding industry, trade, and other tertiary sector activities. This objective of the takeover of banks was not the only one; control of monopolies, ending of the stranglehold of a few industrial houses on the credit system of the country and meeting the credit needs of the small men were equally important objectives of the takeover of banks. Today when one is trying to appraise the performance of the banking system, one cannot keep the framework of appraisal confined to these original objectives alone. For one thing the Green Revolution has come to stay while the loss of control over banking institutions could not inhibit the rate of growth of assets and turn-over under the control of the large industrial houses.

For price stability

Thus the basic framework for the evaluation of the role of the banking system after industrialisation has to be placed in the context of the general functions of the banking system and the basic objectives of economic planning and policy. As the Committee to Review the Working of the Monetary System has pointed out, mobilisation of savings and the deployment of these resources among different sectors of the economy according to the plan priorities are key elements in the process of developmental planning. Thus, as was pointed out in the First Five Year Plan, the role of monetary and credit policy and therefore of the banking system has to be seen as that of maintaining price stability and for regulation of investment and business activities according to the needs of development planning. That is to say, as mobilisor of resources and as the main vehicle of the credit delivery system the nationalised banks had to contribute to mobilisation of savings and utilisation of these resources for socially purposive ends in such a manner as to maintain price stability. On the basis of the data which have become available, let us try to see how far is the banking system able to respond to these tasks.

For economic growth

During this period the share of public sector in GDP has increased from about 15 per cent to about a quarter. Agricultural production has increased at an average annual rate of 3.4 per cent during the period 1970-71 to 1983-84. During the same period, the index of industrial production rose at an average annual rate of 4.7 per cent. During this period wholesale prices increased at the annual rate of 9.5 per cent but prices of primary articles experienced an increase of 9.9 per annum while that of manufactured products increased at the rate of 8.9 per cent per annum. Just as there were wide year to year fluctuation in the output of food and non-food agricultural commodities the price level in general and of agricultural commodities in particular also saw wide year to year fluctuations. During this period, for instance, the prices of primary articles increased by more than 25 per cent per year during two years. The growth path of manufacturing output too was far from steady. The prices of fuel, power, light and lubricants rose at the fastest rate, the annual average rate of growth being 13.7 per cent. During this period the share of the secondary sector in GDP moved a little above 21 per cent while that of the tertiary sectors increased significantly to 40.7 per cent, while that of agricultural experienced a slump to 38.2 per cent.

Nationalisation and after

Against this setting of the economic performance, let us look at some indicators of the performance of the banking sector. The period since nationalisation saw a phenomenal geographical expansion and tremendous functional diversification of the banks. The average size of population per bank branch improved from 65 thousand to 15 thousand. The number of bank customers improved, transactions and inter-bank transfers also increased very significantly. As the Committee to review the working of the monetary system has pointed out as at the end of 1980, the banking system had more than 10 million customers with an estimated 3 million transaction and 1 million inter-branch transfers per day. The number of rural branches to the total number of bank branches stood higher at 56 per cent as compared with 22 per cent in 1969.

The overall expansion

As a result of deeper penetration of the banking habit, the total deposits of the banking system increased to almost Rs. 64 thousand crores at the end of June 1984 compared to Rs. 44,646 crores at the end of June 1969. As against 38 million accounts with the banks in 1973, the number of accounts with the banks stood at 145 million at the end of June 1981. It means the number of bank accounts are more or less 1/5th of the number of people in the country. These deposits as a percentage of National Income rose from 15 per cent in 1969 to 38 per cent in 1984. The currency deposit ratio which was 1.53 in March 1951 came down to 0.30 in March 1984. This steep fall highlights the growth of deposits in the country which has come about fairly considerable owing to the rapid growth of the banking system. Certainly the rate of growth of prices and the rate of growth of the black economy have also made a considerable contribution to the growth of deposits with the banking system.

Long-term investments increase

The quantitatve expansion has been accompanied by increased lending to the priority sector from 14 per cent to 36.7 per cent which means a proportional reduction in the share of credit which was cornered by large and medium industry and trade. Of course, the absolute amount going to the conventional hot favourites of the private banks

went up manyfold. During the period 1973 to 1983 the credit deposit ratio of rural branches improved from 47.2 per cent to 59.9 per cent. The total bank lending to the priority sector has almost touched the level of Rs 15 thousand crores at the end of 1984. Another healthy feature is the increase in the share of term loans from around 12 per cent in early 70's to about 24 per cent in 1981. The total number of term loan accounts at the end of 1981 was 41 per cent of the total number of accounts. Thus Indian banking has moved a long distance from the anglo-saxon self-liquidating short-run lending to financing of long-term investments. Related features has been on the increase in the proportion of deposit with maturity of over 5 years which constitute about 62 per cent of the total term deposits. This proportion used to be as low as 6.2 per cent. Thanks to the wider spread of the banking system with the proportion of savings in the form of financial assets to total household savings increased from 36 per cent during 1955-56 to 54.1 per cent during 1983-84.

Growing outstanding loans

Certain disconcerting aspects of the functioning of the nationalised commercial banks are often highlighted. For one thing, lately there has been some slow-down of the pace of deposit expansion. Then, through bank credit to the rural and agricultural sector has recorded impressive gains, (notwithstanding the question of distribution of credit between farmers with different sizes of landholdings), the banks are saddled with large quantities of outstanding loans. At the end of June 1982, the percentage of recovery to demand was 52.2 per cent for the rural lendings. This not only limits the recycling of funds, but adversely affects the profitability and viability of the banks. It is all the more indefensible as the bulk of the defaulters are large farmers with better capacity to repay. The unorganised and riskier nature of agricultural lending cannot go very for in explaining the high rate of default as the incidence of poor recovery in the industrial sector has afflicted almost one lakh units belonging to all size, groups and locks up over Rs. 3 thousand crores. The percentage share of credit with the industrial units considered sick (i.e., units presently not in a position to service the debt) to total industrial sector credit amounted to about 14 per cent at end of June 1983.

Low loan recovery

The earning of the banks are considered low with larger volume of deposits and lendings, lower earnings reflect high operations costs. Since the banks have to subscribe to low yield government securities, their earnings to a certain extent remain poor. Increasing share of high-interest term deposits too contribute to the same result. Starting new branches also adds relatively heavily to costs in the initial stages. Low recovery of loans also tells upon profitability. Despite these factors over which the banks may have relatively little control, it is often said that over-staffing, poor labour relations and work ethics and non-innovating management practices too cannot be ignored. However, the share of establishment costs in total expenses of the banks has come down impressively.

Large houses share bigger credit

Then, the share of total credit claimed by large-sized borrowing accounts are disproportionately large. If one were to exclude the priority-sector lending, such large loan accounts take a still bigger part of bank lending. This is a serious compromise of anti-monopoly role of bank nationalisation. Whether such a role is at all possible with increasingly market and private sector based approach to industrial growth since mid-seventies is a serious hypothesis. After all, the assets controlled by 25 large industrial houses increased by almost 60 per cent in just three years during 1980-83. While the banks' lending policies with anti monopoly accent could have created hurdles in the expansion of the assets and turnover under the control of the MRTP and FERA groups, it is unlikely that these policies could have proved effective brakes, particularly when so many term-lending institutions have been created for financing industrial projects which are controlled by the large houses. More existence of banks outside the direct control of big business cannot restrain the growth of monopolies unless operational policies are framed for this end. We have seen some aspect of the working of the banks as also the performance of some macro-economic variables relating to the Indian economy. The policies and operations of the banks have more to do with the channelisation of investment and the behaviour of the price level than with the growth rate as such. As a result, the banking operations tend to influence the sectoral composition of growth and regional and inter-class and inter-personal distribution of income and wealth. True, many influences other than those emanating from banking operations bear on the growth pattern and stability of the economy. In India an attempt was made to give a socially chosen shape to the rate and pattern of growth in an environment of economic stability. Planning was the major instrument for this task of modifying the market mechanism. The structural imblances which persist and worsen (as reflected in relatively low share of industry in GDP, over-expansion of the tertiary sector, particularly its non-productive, un-organised component and the disproportion between income shares and employment shares of various sectors, the unplanned and uncontrolled growth of the general price level and its sectoral distortions and the worsening of the employment and equity scene) indicate that planning in general and banking operations in particular have not been effective in undoing the trends unleashed by the market forces.

Growth of capitalism too

At the same time it must be said that these policies and plans have helped objectively, even if not purposively, to accelerate the development of capitalism in India. Such a development requires a great deal of financial development. Various indicators of financial development provided by the Report of the Committee to Review the working of the Monetary System underline the fact that the financial system has helped the growth of capitalism an in turn has derived sustenance from it. The Report shows that the financial structure has grown more rapidly than national income. The ratio of financial claims to net capital formation increased over the years. There has come about a greater degree of separation of the functions of savings and investment among different units There has also been a market rise in the institutionalisation of savings as evidenced by increasing ownership of financial assets in the economy. The share of the banking system in the total financial claim has also gradually increased. The role of the foreign sector in financing economic activity in the economy is declining when compared to the role of domestic financing. The share of government sector in the disposition of domestic savings has substantially increased. Thus, it can be said that financial development, helped substantially by public sector banking in the disposition of domestic savings has reached a new height in India.

The question is that since this process has involved public sector banks and the state, how is the outcome different from the one which could have resulted from purely or mainly market processes. It appears that without State intervention and participation such a degree of financial development may not have come about to the extent it has done. But in the process of pushing up growth of the financial sector, the public sector banks do not seem to have brought about any change in pattern and direction of development which the market could not have brought about or would not find acceptable. This is the basic crisis of so many powerful instruments like nationalisation : they get co-opted in the overall dominant framework unless they are resorted to in such a manner as to change the character and structure of dominance in the economy. Failing this, there is the possibility and need for introducing consciously powerful modalities and principles guiding the operation of state-owned and managed undertakings in order to produce results capable of countering or undoing the market outcomes In India, public sector banking could not become qualitatively different from private banking : it only tinkered with the established practices in order to accomplish faster growth capable of meeting some additional credit demands and or needs with the privately controlled banks would, in greater probability, have neglected This is far from the introduction of social banking : given the basic structure of the economy that is not to be as well. But the intermediate zone of possible activities which can give socially desirable correctives to market-determined outcomes has at best been tried only marginally. This is the area in which our public sector banks can accomplish a great deal if their tasks are appropriately redefined. The difficulties and discourtesies at the bank-counters or concerning the functioning of the branches, or about the head offices in their routine functions are, in a relative sense of marginal criticality. The main challenge is to effectively use the banks as instruments of macro-economic management for curbing inflation and to determine the pattern of investment according to social objectives. This cannot be done only through the Board Rooms of the banks but by developing and enforcing appropriate guidelines, decision-rules and information flows for socially responsive functioning of each branch. □

(contd. from page 7)

has been phenomenal more than six fold rise in the number of branches, eighteen fold rise in deposits and fifteen fold rise in advances. Banks have adopted themselves to the changing needs and demands of a developing economy. Further, considering the various complexities and attendant problems that they had to face in the context of multi-dimensional growth, like infrastructural facilities, lack of trained man power and non-availability of suitable premises in rural areas, their achievement is commendable.

NCDC to augment Cooperative efforts

National Cooperative Development Corporation (NCDC) will channelise nearly Rs. 145 crore to the cooperatives throughout the country during 1986-87 to implement new strategies for development that are intended to help achieve foodgrains production of 185 million tonnes by 1989-90 These strategies include : increased thrust for market intervention by cooperatives; implementation of integrated cooperative development projects in selected districts; and special emphasis on development of cooperatives for weaker sections for poultry and fishery.

The NCDC scheme for integrated development of cooperatives will be area-based and cover 35 districts in the country during the Seventh Plan period. The Corporation will provide nearly Rs. 3 crore to primary agricultural credit societies in each district through the State Governments for implementing the overall district development plan.

For promoting the weaker sections such as fishermen, NCDC has launched an integrated fisheries development project in West Bengal. The project, costing Rs. 7.23 crore will cover Midnapur and the 24-parganas district of the State. It is expected that the project will raise fishery production from existing 50,000 tonnes to 54,000 tonnes. It will also benefit nearly 2,000 fishermen directly and provide 3 lakh mandays of employment in the fabrication and construction of nets and boats and grading and sorting of fish.

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Further information is available on request

Banks as instrument of socio-economic change

R. N. Malhotra*

The author, Shri Malhotra, Governor of the Reserve Bank of India, here surveys the overall functioning of public sector banks, particularly their constrai..ts, problems of mounting overdues and inadequacy of the existing laws to tackle it, the need for special efforts to improve their profitability and structure of interest rates. He feels, "the future of banking sector in the country will be characterised by greater sophistication, modern work technology,)usiness and increasing contacts with international banking and capital markets. While it is essential to prepare for these challenges and opportunities, banks must continue to address themselves to the present problems so as to make the banking industry sound as well as responsive to the socio-economic needs of our society".

SINCE THE NATIONALISATION of 14 Indian commercial banks in 1969, dramatic changes have occurred in the profile of Indian banking. During this phase of development, the focus has been on widening and deepening the banking system and on effecting a structural transformaiton in the deployment of commercial bank credit in pursuance of the plan objectives of increasing financial savings, amelioration of poverty and modernisation of agriculture and small and cottage industries. Banking has thus emerged as an effective catalytic agent of socio-economic change.

These developments are best depicted by some telling statistics :

(a) Between June 1969 and December 1985, the total number of commercial bank offices rose from 8,262 to 52,398. The number of rural branches increased from 1,833 to 30,944. The average population served by a bank office declined from 65,000 to 13,000.

(b) The number of bank deposit accounts rose more than ten times, from 16 million at the end of March 1968 to 168 million by the beginning of 1983. Of the 24.2 million borrowal accounts as at the beginning of 1983, 12.4 million or more than 50 per cent were those of agriculturists.

(c) Aggregate deposits increased dramatically from Rs. 4,646 crores in June 1969 to Rs. 84,655 crores by the end of December 1985. The ratio of deposits to national income at current prices rose during the period from 15.2 per cent to 48.9 per cent, indicating the banking industry's remarkable contribution in the area of savings.

(d) Total bank credit recorded a jump from Rs. 3,599 crores to Rs. 53,649 crores during the period June 1969 to December 1985.

(e) The ratio of priority sector advances to gross bank credit rose from 14 per cent in June 1969 to 40 per cent by end December 1985.

*Address by the Governor, RBI, at the Ninth Public Sector Bank Economists Meet in New Delhi on May 30, 1986.

It would thus be clear that banking is no longer confined to the more affluent sections of the population. It has acquired a broad base and has also emerged as an agent of development in the rural sector.

The constraints

This massive and speedy expansion and diversification of banking has not been without its strains. Large staffs have had to be recruited and trained within a relatively short period of time. Placement of personnel in rural areas and imparting to them the requisite orientation has been a difficult task Promotions have had to be accelerated. The geographical spread of banking services had to contend with deficient infrastructures and poor communications. Lines of supervision and control have lengthened. While there has been an explosion in the number of transactions, the work technology in banks has not changed House-keeping functions have suffered. Lending to the priority sectors, particularly the weaker sections, has called for a considerable adaptation of the procedures and practices of lending There have been growing pressures emanating from the legitimate aspirations of the people. Some rigidities have also built up in the personnel area underlining the need for greater motivation and discipline and for strengthening the management function No doubt, to meet these challenges the banks had from time to time been revamping their organisational structures and expanding training facilities These have undoubtedly helped, but strains have tended to persist There are deficiencies in customer service and a squeeze on profitability. The quality of loan assets would also appear to have suffered due to internal shortcomings as well as increasing sickness in industry.

It is my view that around the beginning of the Seventh Plan, the phase of phenomenal geographic expansion of banking has started yielding to a new phase which would be increasingly marked by consolidation of gains made so far, higher productivity and enhanced sophistication In this phase, satisfactory solutions have to be found to the problems emanating mainly as a by-product of the phenomenal expansion of the last decade and a half The conventional virtues of viability and profitability of banks—aspects which perhaps did not understandably receive adequate emphasis earlier—need to be reiterated. Bankers would also have to show their ingenuity in harmoniously blending social banking with sound banking

Consolidation

Steps towards consolidation are already underway. The new branch licensing policy while concentrating on filling spatial gaps in rural areas envisages opening of urban and metropolitan bank branches only on the basis of demonstrated need and potential financial viability. The capital base of nationalised banks is being strengthened. Returns on statutory liquidity and cash reserves of banks have been raised. After a considerable time lag, banks have revised their service charges.

Each bank has drawn up a comprehensive two-year plan for improving its overall operations. The plans aim at strengthening of internal structures to ensure better supervision and control, expansion of training facilities where warranted, discipline and motivation of staff, revamping of internal inspection and audit machinery, improvements in house-keeping functions, measures to improve credit appraisal and quality of loan assets, improving priority sector lending, introducing new work technology on a selective basis, a renewed emphasis on recovery of bank dues, control of costs, and better customer service and financial viability. The implementation of these plans is being reviewed at quarterly intervals by each bank chairman and the Reserve Bank. The emphasis on improved customer service is already beginning to show perceptible results. All these efforts should bring about a marked improvement in banking operations and enable banks to face the challenges of the future with confidence.

As I indicated, the new phase of banking will be characterised by increasing sophistication. Apart from introduction of modern technology and mechanisation, there will be changes in the composition of bank business reflecting the enhanced sophistication of industry and trade. Non-fund business may assume greater importance. Merchant banking services will grow in response to the development and maturation of the capital market. Already, leasing is catching on and other services such as trust functions and factoring could also be taken up. Innovation has been sweeping the international banking scene, particularly in the recent years. With greater exposure to external banking and capital markets, there will be increased opportunities for involvement in areas like foreign collaboration arrangements, external commercial borrowing and non-resident investments. Economists working in banks have a significant role in assisting their managements to prepare for the new tasks.

Problem of overdues

Overdues in respect of rural and industrial bank loans have been on the increase. Inadequate recovery of claims impairs the banking system's ability to recycle funds, prevents optimum use of resources and erodes profitability.

The overall recovery of agricultural dues has ranged between 50 per cent and 55 per cent of demnad in recent years. There are wide inter-regional varia-

tions. The recovery performance was the highest at 61 per cent of demand in the northern region during the year ended June 1985. At the other end, the recovery performance of the eastern region was only 38 per cent. While some States like Punjab, Kerala and Sikkim registered recovery rates around 70 per cent, some others showed rates as low as 20 per cent to 30 per cent. Further, variations in inter-bank performance were also significant. I may mention here that the recovery performance of co-operative banks has, by and large, also been less than satisfactory, and in several areas, the high incidence of overdues has choked off the normal flow of co-operative credit. It is well-known that default is most common among the large borrowers, most of whom have the ability, but not the inclination, to repay their debt obligations.

The factors responsible for this state of affairs have been well studied and analysed. Apart from defective appraisal of loan applications and inadequate monitoring of credit utilisation, there are reasons such as the impact of natural calamities, wilful defaults, mis-utilisation of loans and weaknesses in recovery procedures. Since commercial banks are now committing 40 per cent of their lending to priority sectors, mainly in rural areas, they must improve the quality as well as recovery of such loans Rural branch managers need to develop greater contacts with their clients through regular field visits so that identification of beneficiaries and appraisal of loan applications improve, post-sanction monitoring of credit utilisation is strengthened and recovery of loans is pursued regularly and effectively. At the same time, it is necessary that underfinancing is avoided, repayment schedules are pragmatically drawn up and when natural calamities occur, short-term loans are quickly converted into medium-term loans according to prescribed procedures. It will be useful if bank economists were to consider how bank profitability could be affected if present rates of recovery do not improve Importance of maintaining an environment conducive to recovery of dues cannot be over-emphasised Here, the role of State Governments is crucial. In the past, across-the-board solutions, through large scale write-offs or reduction of loan liabilities, have not worked well. On the contrary, such measures have created expectations of further reliefs and accentuated disinclination to repay loans on the part of wilful defaulters. The present systems and procedures do provide for affording relief where warranted. One major step in improving the environment would be to enforce recovery from defaulters who are large borrowers. The existing laws and administrative arrangements are inadequate to tackle the serious problem of mounting bank overdues The Central Government is already considering improvements in the law for recovery of bank dues This should be supplemented by strengthening the enforcement machinery.

The recent introduction of crop insurance under which farmers availing of crop loans from co-operatives, commercial banks and regional rural banks for raising specified crops are eligible to the extent of 150 per cent of such loans in case of natural calamities should go some way in reducing the high incidence of repayment defaults. However, I must caution that this scheme should not engender a sense of complacency on the part of banks where recovery of dues is concerned.

Growing sickness in industries—large, medium and small—is also a matter of serious concern. Between June 1980 and June 1985, the number of identified sick units increased more than four-fold from 23,740 to 99,668 and the outstanding amount of credit locked up with them increased from Rs. 1,745 crores to Rs. 3,805 crores. While the number of large sick units rose from 389 to 597, the rise in the case of small-scale industries was from 22,325 units to 97,890 units. The seriousness of the problem is evident from the fact that about 8 per cent of total bank credit is frozen in these sick units. A businesslike approach appears to be warranted with the objective of reviving potentially viable units and of taking hard decisions on those that are not. I do hope that the proposed Board for Industrial and Financial Reconstruction would promote this approach. Early detection of incipient sickness in industry, regular reviews of industrial accounts and quicker adoption of remedial measures could be very helpful. At present, whenever loans are recalled, banks file civil suits which take several years to be disposed of. Execution of decrees poses serious problems. Recalcitrant defaulters take full advantage of these delays to the detriment of banks. There are complaints about unauthorised diversion of assets.

Profitability

At the outset, it has to be recognised that the profitability of public sector banks cannot be judged entirely by the normal criteria. Banks in India have to operate under several constraints dictated by wider socio-economic objectives. There is, firstly, the administered interest rate structure with relatively low interest rates for preferred sectors which account for an increasing proportion of bank lending. Superimposed on this are the statutory liquidity requirement which is at present 37 per cent of total demand and time liabilities and a high cash reserve requirement due to compulsions of monetary policy. Besides, there are preemptions of use of credit like that for public procurement and distribution of foodgrains. As a result, only about 20 per cent of the new resources raised by banks is available for lending on what may be termed as commercial rates of

interest. Indian banks are also undercapitalised. Operating costs are high on account of their speedy geographical spread and the shift to retail, mass lending. The Reserve Bank and the Government are conscious of these constraints and have taken several measures to help improve bank profitability. Interest paid on cash reserves in excess of 3 per cent of demand and time liabilities was stepped up by the Reserve Bank in stages from 9 per cent to 10.5 per cent. Similarly, interest on advances for foodgrains procurement at support prices fixed by the Central Government was raised from 12.5 per cent to 14 per cent, effective 1st October 1984. Further, in consultation with the Reserve Bank, the Government of India has been gradually raising the coupon rates on Government securities. A scheme is underway for augmentation of capital of nationalised banks. These measures, among other factors, have improved the profitability of banks. In the year 1985, the gross profits, i.e., profits before provisions for tax, bad and doubtful debts and contingencies, showed a sharp increase of 35 per cent, as against a decline of 10 per cent in 1984 and a modest rise of 5 per cent in 1983. Similarly, net profits increased by 36 per cent in 1985 over the level of 1984. In sharp contrast, the net profits had recorded a fall of 2 per cent in 1984, close on the heels of a modest rise of 9 per cent witnessed in 1983. However, bank profitability as a percentage to funds employed remains quite low.

Banks need to make special efforts to improve their profitability. They must enhance cost consciousness at all levels and raise productivity substantially. The commonly adopted criterion of business in nominal terms per employee is evidently an inadequate way of looking at productivity as is does not take into account the impact of inflation on nominal increase in business and the cost per employee. More refined and stringent criteria need to be employed. The recently evolved Branch Licensing Policy should also help contain expenditure and improve productivity. The increasing incidence of non-performing assets is a serious drag and calls for effective remedies. Quality of bank assets, present and future, must be upgraded. Banks could also, within reasonable limits, increase their non-fund business. Needless to say that they are entitled to levy appropriate charges on the services rendered by them. Improved cash management and safeguards against revenue leakage need greater attention. Banks could also examine the scope for rationalisation of loss making branches consistent with the need for providing adequate services to the relevant localities.

Restructuring of banks

The question of restructuring of banks has been under discussion for long, especially from the days of the Banking Commission which was appointed by the Government of India in 1969. Subsequently, the Committee on Public Sector Banks, set up by the Reserve Bank in 1977 under the Chairmanship of late Shri James Raj, also looked into the question; the Committee considered that a bank with branches in the range of 1,000 to 1,500 as being of a reasonable size.

I wonder whether there is any unique size of a bank which could be considered as optimal so that one could identify the cut-off point where economies or diseconomies of scale begin to operate. What was regarded as unwieldly 10 or 15 years back could perhaps be considered as of a reasonable size with improvements in communications, changes in work technology, mechanisation and computerisation. The question of size is also related to the internal organisational structure of a bank. One could argue that effective decentralisation of the decision making process in a bigger bank, backed by sound management information and monitoring system, could achieve the same results as in the case of a bank of optimum size. I know that on the international banking scene, the more recent trend seems to be toward larger size, what with merger and take-over of banks, about which we read so much.

In India there is not enough evidence to show that size has much to do with operational efficiency and profitability. Some very large public sector banks as well as those that are much smaller have shown satisfactory levels of efficiency. Personally, I take the view that the energy and expenditure involved in restructuring banks in India, on whatever basis one may propose to do so, could perhaps be more profitably employed in making the existing internal organisational structure of banks more effective and efficient. In particular, we need to ensure that the supervisory levels at the zones and regions are effectively organised and have adequate delegated powers. The management information system needs to function more smoothly and meaningfully. There may also be some scope for rationalisation of bank branches, both intra and inter-bank.

Chakravarty Committee Report

Let me now turn briefly to the Chakravarty Committee Report. As you know, one set of the Committee's recommendations relates to monetary policy issues. Some of these recommendations such as those suggesting the adoption of monetary targets for better fiscal and monetary co-ordination and redefinition of the Central Government budget deficit have already been accepted in principle, and are likely to be implemented soon. I would here confine myself to two main areas of the Committee's recommendations which are of direct interest to commercial banks, viz., interest rate structure and operational aspects of credit to industry and trade.

Structure of interest rates

The Committee has recommended that interest rates on bank deposits with maturity of five years and above as well as those with maturity of one year should be fixed by the monetary authority, leaving banks free to fix deposit rates for other maturity periods. The basis for fixing the rate on the former category of deposits suggested by the Committee is the expected long term inflation rate plus a positive real rate of return of not less than 2 per cent per annum. For instance, if the assumed rate of long term inflation is reckoned as 9 per cent, then five year deposits would carry an interest rate of 11 per cent. The one year rate of deposit is to be fixed with reference to the short term rate of inflation. It would be useful if this forum could consider the feasibility of allowing banks to compete in the matter of fixing their own deposit rates as indicated by the Committee.

As for lending rates, the Committee has suggested that the Reserve Bank should fix a basic minimum lending rate which would be 3 per cent more than the maximum nominal deposit rate. Illustratively, if the maximum deposit rate was fixed at 11 per cent, the basic minimum lending rate would be 14 per cent. The Committee has also said that each bank should be free to adopt rates higher than the basic minimum rate. While suggesting that there should be one concessional rate lower than the basic minimum rate it has not made any specific recommendation in this behalf. Perhaps the complex considerations involved in fixing concessional rates have led the Committee to refrain from doing so. However, there seems to be scope for reducing the multiplicity of concessional rates and any suggestions that this seminar could offer would be welcome. The seminar could also discuss how far the approach of the Committee to lending rates is practicable in our circumstances. Some apprehensions have been expressed that fixing only the minimum rate and freeing the general rate may, in practice, result in average lending rates to industry and trade declining to undesirably low levels. The implications of the structure of lending rates proposed by the Committee for the profitability of banks need, therefore, to be analysed thoroughly.

Bank credit to industry and trade

The Committee felt that the present cash credit system of commercial banks has certain drawbacks and recommended that it should be substituted mainly by loans and bill financing mechanism. In this connection, the Committee has proposed that the working capital limits should consist of . (a) Cash Credit I, (b) Cash Credit II, and (c) Normal working capital limit. The Committee has further suggested that Cash Credit I should be composed of, (i) loan portion, (ii) bill finance limits, and (iii) cash credit portion. The Committee's recommendations also envisage a multiple interest rate structure with each of the several categories mentioned earlier attracting a different lending rate. There is no gainsaying that the cash credit system of lending has slowed down the growth of bills financing, and that the predominance of cash credit should be substantially reduced. The forum may consider whether it would be feasible to adopt the multiplicity of credit limits carrying different interest rates suggested by the Committee. If not are there other preferable alternatives or variants ?

Long range planning

In order that a broad perspective may be available to the banks to help them draw up their own long range plans, it might be useful to develop perceptions at the macro level as to how economic variables affecting the banking industry would move over a period of say the next fifteen years. To illustrate, the Seventh Plan envisages important changes in the structure of the economy: agriculture and related sectors are expected to contribute 33 per cent of GDP in 1980-90, while the share of mining, manufacturing, construction, electricity and transport will be 34.4 per cent By the end of the Seventh Plan, therefore, the contribution of the agricultural sector, industrial sector and the services sector will, in terms of income generated, be roughly of equal proportion, i.e., about one third each. This would have implications for the allocation of bank credit among different sectors over the Seventh Plan period and beyond.

The perspective could also spell out in greater detail the underlying assumptions regarding deposit growth. I am not sure whether the long term trend in deposit growth at the macro level is fully appreciated For instance, the crude elasticity of real deposits (i.e., deposits adjusted for inflation) with respect to real income has tended to decline over time. The elacticity which was around 2.9 per cent in the Fourth Plan period declined to around 1.7 per cent in the Sixth Plan period. In other words, during the coming years, if real national income grows at say 5 per cent per annum, deposit growth at the national level could be somewhat less than 10 per cent under the assumption of zero inflation. Analytically, it is clear that deposits growth in the initial stages of branch expansion was much more buoyant than what it is at present. The expanding branch net work also meant diversion of part of the resources in the informal sector to the institutional or formal sector. However, the impact of remittances from Indians settled or working abroad on domestic deposit growth was more pronounced in the later half of 1970s. It would be necessary to take a view on the future trend of such remittances, especially in the light of the recent crash

in international oil prices. A view has been expressed that the recent growth of the capital market is leading to disintermediation in the sense that resources raised through the capital market may not be finding their way to the banking system and could be floating in the intercorporate market, at any rate in the interval between raising capital and putting it to its end use. The validity of this view and its implications would need examination. Again, we have to contend with the fact that savers in future would tend to be more choosy in investing, considering the widening spectrum of investment avenues for savings. Furthermore, it might be useful to sketch the profile of what might be called the "institution mix" of financing as it would emerge over a period. More concretely, at present there are at least three financial institutions engaged in financing agriculture and other rural development activities—commercial banks, co-operatives and regional rural banks. Against the background of the commitment to the financing of these sectors implied in the development strategy, it may be useful to draw up a scenario of the "institution mix" as it should evolve by 1990 and beyond. In doing so, the more basic question whether there should be one or two or three channels for commercial lending to the rural sector could perhaps be examined.

These examples should, I think, suffice to underline the need for developing a national perspective for banking industry. Perhaps the Reserve Bank and the National Institute of Bank Managemnet should initiate some studies in that direction.

Conclusion

To conclude, since 1969 the banking industry has grown phenomenally and now provides services throughout the length and breadth of the country. It has played a remarkable role in mobilising savings and redirecting credit increasingly in favour of the rural areas and weaker sections of society while continuing to finance industry and trade. The rapid expansion, among other reasons, has also brought considerable strains which are reflected in erosion in the quality of customer service, deterioration of loan assets, mounting arrears of bank dues and lower profitability. Having achieved adequate georgraphical spread, the banking industry has entered a new phase. In this phase, the key aim would be to consolidate the gains made so far. Consolidation would imply strengthening of banks' structures, training, housekeeping, internal procedures and systems, improvement in the quality of loan appraisals and loan assets and better customer service and profitability. Policies and specific measures are already underway to bring about all-round improvement in banking operations. Successful implementation of these efforts should enable banks to face the future with confidence. The future will be characterised by greater sophistication, modern work technology, innovation, new and growing areas of business and increasing contacts with international banking and capital markets. While it is essential to prepare for these challenges and opportunities, banks must continue to address the present problems so as to make the banking industry sound as well as responsive to the socio-economic needs of our society. At the same time, environmental stresses need to be relieved through appropriate public policies. □

Mahanagar Telephone Nigam Ltd. launched

A new public sector enterprise, the Mahanagar Telephone Nigam Limited, has been launched which will take over the telephone services of the metropolitan cities of Bombay and Delhi. This enterprise, like any other Public Sector Undertaking, will have autonomy, flexibility and capability to raise the much needed resources so that they could be utilised both for the development of the telecommunication services in these two major cities and for augmenting the development programmes in the rest of the country.

The reason for choosing Delhi and Bombay for forming this Corporation is that these two cities have the largest concentration of the telephone connections and constitute almost 25 per cent of the total number of telephone connection in whole of the country. The waiting list is about one-third of the total waiting list of the country.

Mineral production reaches all time high

The country attained an all time high mineral production worth Rs. 8,541 crore in 1986. This is an increase of 7 per cent over the 1984 production. According to the Annual Report of the Department of Mines for the year 1985-86, the growth rate achieve by the aluminium industry in 1984-85 was generally maintained during 1985-86. The production of aluminium during the period April to December 1985 was 1,98,340 tonnes as against the total production of 2,76,498 tonnes during 1984-85. The aluminium production in 1985-86 would have been substantially higher but for the interrupted power supply position in Karnataka, Orissa and Tamil Nadu.

The country is expected to be surplus in aluminium by 1988-89 with National Aluminium Company Ltd. (NALCO) going on stream in 1987-878. The demand and production of aluminium during 1989-90 will be 4,75,000 tonnes and 4,99,000 tonnes respectively. □

Performance of public sector banks at a glance

	June 1969	1985	
(A) Branches			
(i) Toal number of branches	6596	3558[illegible]	Sept.
(ii) Number of branches at rural centres	1505	1768[illegible]	Sept.
(iii) Proportion of rural branches in the total branch network (%)	22.8	49 7	Sept.
(B) Deposits and advances			
(i) Total deposits (in crore)	3871	77664	Dec
(ii) Total advances made (in crore)	3017	47495	Dec
(iii) Total advances made through the rural branches (in crore)	N.A.	5386	March
(iv) Credit-deposit ratio of the rural branches (%)	N A.	6[illegible].3	March
(C) Credit under 20-Point Programme	**Dec. 1982**	**June 1985**	
(i) No. of Borrowed Accounts (in '000)	7484	14531	
(ii) Amount outstanding (in crore)	[illegible]6[illegible]0	5177	
(D) Functioning of Regional Rural Banks	**Dec. 1975**	**June 1985**	
(i) No. of Regional Rural Banks	40	183 (Distt. covered 3[illegible]2)	
(ii) Branches of R.R.Bs	489	12139	
(iii) Deposits	7 7	1057	
(iv) Advances (in crore)	7.0	1188	
(v) Credit-Deposit ratio (%)	90.9	113.0	

(SOURCE . Department of Banking, Ministry of Finance, Government of India)

Lead banks and rural transformation

Dr. Narendra Prasad

This is a case study by the author of 90 districts alloted to the State Bank of India under the lead bank scheme. He is of the view that lead banks will have to develop a scheme for financing the rural people, particularly those below the poverty line. The banks should be given not the financing targets but targets in terms of the number of poor families to be brought above the poverty line. But the success of the scheme, the author feels, depends largely on the development of other infrastructural facilities, like transport, communication, storage, processing and marketing. Without these facilities the lead banks will have only a limited success.

THE LEAD BANK SCHEME was evolved by the Reserve Bank of India soon after nationalisation of commercial banks with a view to enabling the nationalised banks to work effectively as catalytic agents in economic development. Soon after commercial banks in India started operating in the field of direct agricultural lendings, it was recognised by them that one of the most important strategies to tackle the problems in this new field would be to follow the 'Area Approach'. The idea of 'Area Development' was first put forward by a study group of the National Credit Council on 'Organisational Framework for the Implementation of social objectives' headed by the late Prof. D. R. Gadgil. The group suggested the adoption of an "Area Approach" to evolve plans and programmes for the extension of banking and credit in the country. The quintessence of the recommendation was that commercial Banks should be assigned particular district in which they should work as a consortium leader and pace-setter in providing integrated banking and credit facilities. The group suggested that the administrative units or 'District' be taken as the nucleus of this approach, especially since most statistical data in India were collected on a district basis. Subsequently a committee of bankers headed by Shri F.K.F. Nariman was appointed by the Reserve Bank of India to evolve a co-ordinated programme for branch expansion. It also felt that for ensuring sufficient spread of banking facilities throughout the length and breadth of the country each bank should concentrate on the selected districts.

Methodology

In other words, under the scheme "banks could be allotted specific districts, where they would take the lead in surveying the potential for banking development in extending branch banking after identifying viable propositions and mobilising deposit out of rising level of income". On the basis of recommendations of these two committees the R.B.I. introduced the Lead Bank Scheme in December 1969. The Scheme was to give a concrete shape to the idea of the area approach for development of credit banking facilities. Its two-fold objectives were massive mobilisation of rural deposits and stepping up of banks lending to the weaker sections in rural India.

Under the scheme all the districts in the country (excluding the metropolitan area) are allocated among the public sector banks and to private sector banks In each of the districts the respective lead banks is expected to play the role of consortium leader among the banks operating in matters relating to identification of prospective centres, for opening of branches. mobilisation of deposits, identification of prospective activities and extension of adequate

credit to help intensive utilisation of the economic potentialities of the concerned districts.

Another aspect of the scheme in the "formulation of dynamic relationship between nationalised and non-nationalised banks between commercial banks and co-operative credit institutions and between short and long term lending institutions":

The lead bank does not have the monopoly in banking business in allotted districts, but is expected to function as a consortium leaders It is *primus interpares* The success of the Lead bank will be judged not so much by the banking business or even the development work by its own offices in the districts, but by the overall improvement it is able to bring about through the banking system. The implementation of lead bank scheme together with phased programmes of branch expansion will, no doubt contribute in a major way to the spread of banking habit and thereby spreading up the process of moneytisation of economy.

Financing priority sectors is not just an outlet for the bank's resources but a powerful tool of raising the level of production in these sectors and thereby improving the stadard of living of the people In connection with the priority sector lending in general and lending in backward and rural areas in particular, the bank has accorded an enthusiastic response to the implementation of the lead bank schemes

Lead bank surveys of all the 90 districts allotted to the State Bank group under the lead bank scheme have been completed. The district consultative committees for banking development have also been constituted in all the lead districts. Out of the 247 centres allotted to the state bank group in its lead districts and 231 centres in the lead districts of the other banks, the group has opened 174 offices and 159 offices respectively. Credit is essential for the development of the rural areas. So preparation of credit plans for lead districts was essential The main facets of the concept of Credit Planning.' that have emerged in the recent years are :

(i) Alignment of credit with plan priorities —In a planned economy like India, the chief objectives of credit planning should be to see that the plan targets of output and investment are achieved in full and that mal-distribution of monetary resources of the community does not hamper the implementation of the plan programmes This aspect of the concept has led to the examination of the credit portfolios of commercial banks to see whether there was any over-financing or under-financing of industries, if so, how it takes place.

(ii) **Balanced sectoral credit allocation**—Area examination of credit operation of commercial banks revealed the predominance of large industries and corresponding neglect of other important sectors of the national economy such as small scale industries, agricultures and small business etc.

(iii) **Balanced regional credit allocation.**—Examination of operations of commercial banks from the angle of spatic sectoral or regional distribution also brought to light a lop-sided development of banking in India both in terms of distribution of offices and allocation of credits.

(iv) District credit planning.—District credit planning seeks to assign to commercial banks a leading role in the development of credit institutions necessary to meet the credit needs of the districts—present and emerging ones The task of the lead bank scheme is to estimate the deposit potential and credit gaps so that steps could be taken to tap the deposit potential and fill the gaps.

The strategy

The bank has adopted the strategy of preparing such credit plans for all its lead districts in order to help accelerate economic development of these districts in an orderly manner Credit plans can be evolved on the basis of depth studies of small and manageable area units like community development blocks The credit plans include technically feasible and economically viable bankable schemes for the representative blocks as well as for the rest of their respective regions, thus, making a plan for credit extension for the whole districts With a view to ensuring effective implementation of the credit plan, the commercial banks and other financial agencies operating in the districts and the Government departments are actively considering the steps that need to be taken In view of various constraints on the commercial banks in financing agriculture which forms a major part of the credit plan they have impressed upon the state Government the urgent need to strengthen and revitalise the co-operative credit structure in the districts. As regards centres identified for branch expansion in the initial surveys of districts under the lead bank scheme, the bank has opened offices at 96 centres out of the 134 centres allotted to it in its own lead districts and at 159 centres out of the 200 allotted to it in the lead districts of other banks. Out of the 74 centres allotted to other banks in our lead districts, they had opened offices at 42 centres up to the end of 1974 In order to ensure the steady implementation of credit plans on their completion, the bank has initiated advance action to strengthen its organisational machinery in the lead districts. Further, the bank conducted a series of training programmes for its branch managers in the lead districts and officials connected with the preparation of the credit plans, with a view to developing in them the necessary skills. Pending completion of credit plans, the banks have already undertaken financing of various development schemes in the priority sectors, identified in lead bank survey. The bank has opened offices at 121 centres out of 154 centres allotted to it in its own lead districts and 164 offices out of 200 allotted to it in the lead districts of other banks. Out

of the 75 centres allotted to other banks in our lead districts, they have so far opened offices at 45 centres. Credit plans for as many as 63 districts out of the 67 lead districts of the banks were formulated upto the end of 1976, of which 33 were launched for implementation. The commitments under these plans are integrated with overall operational plan for the bank, and necessary resources are being provided for their implementation. The Government has chosen to issue a new directive to re-orient the lead bank schemes, in such a manner as would substantially help small and marginal farmers. There are a number of Government agencies which are concerned with the development task in rural areas. Banks are now asked to establish report with these agencies not only at the district level but also at the taluka and even the village level itself. Banks have already built up an extensive network of rural branches. The role and function of the lead banks therefore, gets a new dimension. Lead banks will have to ensure that in rural area they develop a scheme for financing the rural people those below the poverty line. The banks should be given not the finance targets but targets in terms of the number of poor families to be brought above the poverty line. Apart from productive loans for financing agricultural operation, farmers would require consumption loans just for buying the foodgrains until the crops are marketed. This is major area of social responsibility in to which banks would be asked to move in a big way. If poor farmers and village artisans can get their food and raw materials requirements at normal, market prices, a new era of social justice will dawn on rural India. The credit plans prepared by the bank envisaging a total credit outlay of Rs. 734 crores during the period 1974—79, were under implementation in 72 districts during 1979. Of the total credit outlay in these districts, the share of commercial banks was Rs. 311 crores, of which the State Bank of India was allotted a share of Rs. 124 crores, which was as much as 40 per cent. The credit plans were primarily designed to exploit extensively the growth potential of the concerned districts, raise the level of income and employment of the local people and to augment the duration of employment and productivity of the under-employed people by upgrading their skills. Different schemes incorporated in the credit plans sought to fulfil the various socio-economic needs of the weaker sections of the population by integrating and co-ordinating the developmental efforts of the concerned Government departments and other developmental agencies operating in the area. Following the introduction of a new information system by the R. B. I. for proper monitoring of performance of banks under the lead banks scheme, the bank conducted special training programmes for branch officials in order to ensure early stabilisation of the new system. The credit plans of the 77 lead districts of banks for the period 1980—82 envisage an outly of Rs. 718 crores by all financial institutions. The share of Commercial Banks in total outlay is Rs. 405 crores of which the bank accounted for Rs. 159 crores or 39 per cent. Against this the bank's actual disbursement totalled Rs. 186 crores, thus, exceeding the accepted commitments. In order to review the implementation of the credit plans and to remove impediments, the banks organised districts level review meeting of the bank and Government officials in 65 out of 77 lead districts and state level review meeting in Andhra Pradesh and Kashmir & Orissa.

Credit development

The objective of the district plans formulated under the 'Lead Bank Scheme' is to guide the credit institutions in the districts to deploy their credit in such manner that they will have the maximum impact on the development of the district and at the same time, benefit on increasing proportion of the weaker sections of the society. The credit plan, thus, mainly seeks to indicate the scope for the development of various types of economic activities which can be financed by credit institutions, in a given time schedule, with an emphasis on increasing the opportunities for the weaker sections to participate in the process of development. Basically, the credit plan is an exercise in indicating the lines on which credit can be extended in a given area in a given priod of time, on the basis of the anticipated demand for credit, from existing or development-induced economic activities. Estimation of credit demand is an essential step in the formulation of credit plan to facilitate setting of realistic goals by banks. Credit estimation is in terms of standard schemes included in the credit plans, prepared on the basis of a study of cost benefit of the activities and their needs for credit. District credit plan constitutes the framework for credit extension in the district under viable banking schemes, which are expected to constitute allround and integrated development of the district economy and reduction of regional imbalances. In the process of formulation of the district credit plans, schemes prepared under Integrated Rural Development Programme, where it was in operation and other beneficiary-oriented or area-development programmes were studied, and bankable schemes aligned with those programmes were included in the district credit plans. The State Bank has made concerted efforts in financing weaker section in its lead districts, most of which are difficult area with preponderence of tribal and socially handicapped persons. The total credit outlay envisaged in the second round of district credit plans for the three years periods, 1980—82 for the 77 lead districts of the state bank was Rs. 732 crores. A large portion of these credit outlay was meant for weaker sections in these districts. The bank accepted share of Rs. 162 crores in these district credit plans, against which its achievements till the end of 1980 was Rs. 111 crores or 68 per cent.

Few aspects of banking development in recent times are as striking and imaginative as the lead bank scheme which had been designed to activate banking

(continued on page 28)

Applying human resource accounting to banking industry

R.K. Ma.ik

It's the human being that converts the capital and natural resources into productive factors. Human Resource Accounting (HRA) is a process to identify and report investments made in human resources of an organisation that are not accounted for under the present conventional accounting practice. The author here examines in detail the feasibility of introducing HRA in the banking industry in order to provide important information about the human resource employed in it. He gives various techniques of measuring the human resource.

THE IMPORTANCE of people in organisations was ignored by the accounting profession until approximately two decades ago. During early and mid-sixties, behavioural scientists attacked conventional accounting practice for its failure to value the human resources of the organisation alongwith its other material resources. Thus, no sophisticated methodology had been developed for managing and accounting for the human resources of the organisation. However, even today, there are a few organisations which have started valuing their human resources.

The human value

The concept of 'human value' is derived from general economic value theory. Prof. Flamholtz has stated that 'Like all other resources, people possess value because they are capable of rendering future services'. However, before we attempt to determine whether a human resource is an asset, we need to define what an asset is. An asset may be defined as something capable of providing future services. In other words, the basic component of asset is its 'service potentiality'. Thus, there must be an expectation of future economic benefits from a resource and such benefits must be measureable.

When human resources are judged in terms of the above definition, it may be stated that they are a great source of future economic benefits. They are an important means of generating economic activities in a business firm. Hence, it will not be inappropriate to term them as 'assets' of the business organisation.

Human Resource Accounting (HRA) is an attempt to identify and report investments made in human resources of an organisation that are not presently accounted for under conventional accounting practice. Basically, it is an information system that tells the management what changes over time are occuring to the human resources of the business.

Human resource in a bank

The banking industry is a service-oriented industry. It provides a variety of services to the common man and the busines world. Its services range from the acceptance of money for deposits to the performance of specialized advisory functions for its clients. Behind the provision of these services are the men, who possess adequate knowledge and expertise in the relevant area. Thus, employees of the bank play an

important role in the success of its operations. The Banking industry, as a whole, can conveniently be termed as a human resource intensive industry.

Yet despite the acknowledged usefulness of these human resources in the banking sector, no effort appears to have been made to account for them in the financial statements of the bank. Banks, in order to obtain the benefits of these human resources, regularly incur costs such as wages and salaries, recruitment expenses, training and development expenses, etc. Accountants have generally followed the practice of charging these 'human resource costs' as operating expenses in the period in which they are incurred. As a result of this treatment, these costs are not reported as separately identified assets in the form of 'Investment in Human Resources' on the balance sheet. Moreover, it has also not been a common practice to separately indicate the amounts of human resource costs included in operating expenses on the Profit and Loss Account. Consequently. the users of financial reports of the Banks are provided with no information about one of its important resources, i.e., 'human resource'.

Measuring them

The valuation of human resources is as important as that of non-human resources because human beings have the productive capacity and are one form in which wealth can be accumulated. The following approaches for the measurement of human resources of a Bank are suggested :

Historical cost approach

In this approach, actual costs incurred on recruiting, selecting, training, orientation and development of the employees are capitalized and amortized over the expected useful life of the human resources. Thus, in case of a Bank, proper records of expenditure made on selecting, training and developing the banking personnel will have to be maintained.

Much of the data that is required for accounting for human resource costs can be available from the conventional accounting system of a Bank. All that is needed is to revise or modify the system in a certain manner. At present. most of the banks merely include the human resource costs (i.e. the sacrifice that may have to be made today to acquire and develop people) in an aggregate account, generally named as 'General or Administrative Expenses'. However, this method fails to provide information relating to different components of such costs. In order to account for the human resource costs of a Bank, the following model is suggested :

Model for measurement of Historical Human Resource Costs in a Bank

Acquisition Cost	(100)	Development Costs	(200)
—Salary of the recruiting staff	(101)	—Salaries paid to the training staff	(205)
—fees paid to the recruiting agency/organisation	(102)	—Salaries paid to the trainees	(202)
—Advertising expenses	(103)	—Cost of Materials supplies to the trainees during training	(203)
—Examination/testing fees	(104)	—Travelling expenses paid to the trainers and trainees.	(204)
—Information Bulletin/Brochure expenses	(105)	—Out-of-pocket expenses paid to the trainers & trainees in case of off the job training.	(205)
—Administration costs of processing applications	(106)	—Imputed cost of sub-normal production during training*.	(206)
—Travel expenses	(107)		
—Entertainment expenses	(108)		
—Cost of relocating employees	(109)		
—placement costs	(110)		

*It is the cost of productivity foregone and may be expressed as the difference in the amount of production of an experienced person and the trainee. Though in case of a service organisations like banks, it may be difficult to measure productivity, yet the cost is there and needs to be included in the set of accounts.

Having collected the data in the above manner, it will now be necessary to estimate the probable period stay of each category of employees with the organisation. No doubt, such estimation may pose many problems, but the past records relating to 'exit' of the employees from the Bank will be helpful in this regard. It will not be out of place to mention here that such information needs to be collected in respect of each category of employees in a bank. The data may be collected in the following manner :

Human Resource Costs

category of employee	Acquisition cost	Development cost	Total
Peons			
Clerks			
Junior officer/ Special Asstts./ Accountnts			
Deputy Chief officer			
Chief officer			
Total			

Thus, the total expenditure incurred in a particular year will be capitalized and will be written off to the income of the next few years during which human resources will provide service. If the human assets are liquidated prematurely the whole of the amount not written off is charged to the income of the years in which such liquidation takes place. If the useful life is recognized to be longer than originally expected, revisions are effected in the amortization schedule.

Historical cost or acquisition cost of human resources is very much similar to the book value of other physical assets. When the employees are hired by the Bank, they are employed with obvious expectation that the services provided by them will far exceed the initial costs involved in selecting, training and developing them and the salaries paid to them. The value of human assets of the bank can be increased by making additional investments in the form of expenditure made on training and orientation. Such additional costs are also capitalized and amortized over the remaining life. The unexpired cost can be shown as 'investment in Human Resources' in the balance sheets of the bank.

This method of 'valuing' human resources is simple and is consistent with current conventional accounting. It is only an extention of the proper 'matching of cost & revenue' concept. Moreover, the information relating to costs is relatively objective and can be verified from the records of the bank.

However, the implementation of this approach might pose the following problems before the managements of the bank :

(i) The approach completely ignores the aggregate 'value' of the potential services of the different categories of bank employees.

(ii) A problem may also arise with respect to the estimation of number of years over which the capitalized expenditure is to be amortized.

(iii) What should be the rate of amortization ? Should it be increasing, constant or a decreasing rate ?

(iv) The economic value of human resources increases over time as the bank personnel (and employees elsewhere also) gain experience. However, in the above approach, the historical cost decreases through amortization. The management may face problem in reconciling the above difference in the value and cost of personnel.

The replacement cost approach

Replacement cost is the cost of replacing an organisation's existing human resources. It refers to the sacrifice that may have to be made today to replace a person with a substitute capable of rendering equivalent services in the given position Rensis Likert has suggested determination of the value of total human organisation on the basis of the assumption that a new similar organisation has to be created from scratch. He says "Suppose that tomorrow your firm had all of its present facilities—everything, but no personnel except the President ; and he had to rebuild the human organisation back to its present effectiveness. How much would this cost ? All costs would be included which are involved in recruiting, hiring, training and developing the replacements to the present level of proficiency and familiarity with the organisation. This should serve as the basis of valuation of human resources of the organisation from time to time."

Thus, in this approach the management has to estimate the cost of recruiting, hiring, training and developing replacements to the level of skill and proficiency of existing personnel.

There are three basic elements of replacement cost . acquisition cost, development cost and separation costs. The components of acquisition costs and development cost have been discussed in the 'Historical Cost Approach ! Separation costs occur as and when employees quit the organisation for any reason. The outgoing employee may have to be paid a month's salary or more (according to the rules of the Bank) and other benefits (such as accumulated balance in Provident Fund Account, Gratuity etc.). The second element of separation cost, though regrettably not taken care of by the banks in India, is the cost of lost productivity prior to his 'exit' from the bank. In most of the cases, it will be seen that the performance of an individual decreases prior to his separation from organisation. Though no specific measure can be suggested for assessing this type of cost, yet the historical performance records of the individual could be helpful in this regard. A third element of the separation cost is the vacant position cost. If the work of one individual in an organisation has an impact on the performance of other employees, the exit of that individual might cause others to pèrform less effectively. For example, in a bank, if the post of a savings clerk falls vacant because of the resignation of the incumbent, it is bound to effect the bank-customer relationship on the one hand and the performance of other staff within that branch on the other hand.

If the management of a bank wants to follow the replacement cost approach, the following model may be helpful in compiling the different components of the human resource costs :

ing out replacement cost could be to ascertain the current costs of recruiting, allocating, training and developing the employees as at the date of evaluation.

Though current replacement cost method of finding out 'value' of human resources comes close to being an ideal method of human asset valuation, yet it has several deficiencies. For example, it may be difficult, if not impossible, for a bank management to locate a similar replacement for a certain specific employee. Moreover, many a time, the bank managers are unwilling to replace|part with an existing employee. Further, the determination of a replacement value may be affected by subjective considerations and as such the value is likely to differ from one manager to another. In addition, this approach completely ignores the value associated with individual employees working together as an effective 'group'.

Present value approach

In this approach, an attempt can be made to find out the economic value of bank employees. The economic value is the money equivalent of service potential. The value of human resources can be found out in two different ways :

(i) by discounting the future salaries and other capital costs (such as costs incurred on hiring, recruiting, training and developing employees) by a certain rate of discount; and

Model for measurement of replacement cost of Human Resources in a bank

Acquisition Cost	100*	Development Cost	200*	Separation Cost	300*
—Salary of the recruiting staff	101	—Salaries paid to the training staff	201	—Severence pay to the employee	301
—fees paid to the recruiting agency/organisation	102	—Salaries paid to the trainees	202	—Payment of P.F. & Gratuity	302
—Advertising expenses	103	—Cost of materials supplied to the trainees during training	203	—Cost of lost production prior to separation	303
—Examination/testing fees	104	—Travelling expenses paid to the trainers and trainees	204	—cost of adverse impact on others performance	304
—Information Bulletin, Brochure expenses	105	—Out of pocket expenses paid to the trainers and trainees in case of off the job training.	205		
—Administrative costs of processing applications	106	Imputed cost of sub-normal production during training	206		
—Travel Expenses	107				
—Entertainment expenses	108				
—Cost of relocating employees	109				
—Placement costs	110				

*The numbers indicate the head of account by which costs are to be accumulated

The replacement cost method of valuing the human resources has the advantage of adjusting the value of human reasources to price trends and thus, the current value of bank's human resources will be shown in the financial statements The manager's could be asked to estimate the cost of replacing their entire branch employees. Another alternative for find-

(ii) by discounting the future earnings of the organisation as at a certain date by a suitable rate and allocating a part of the present value of earnings to human resources of the bank.

In consonance with the above two premises, a number of techniques for measuring the value of human resources of a bank can be suggested.

Under one technique, the major variables that determinate an individual's value to a bank are identified. The ultimate measure of an individual's value to an organisation is his expected realizable value. The expected realizable value may be defined as the present worth of future services expected to be provided by him during the period he is expected to stay in an organisation. This technique calls for a five-step approach for assessing the value of an individual to a bank :

(i) First of all, the bank shall have to forecast the period an employee will remain with it i.e. his expected service life.

(ii) The second step involves the identification of the service states i.e. the roles that he might occupy, including of course the probable time at which he will quit the bank.

(iii) The banks shall have to estimate the value derived by it when a person occupies a particular position (i.e. a service state) for a specified time period.

(iv) The next step is to estimate the probability of occupying each possible mutually exclusive state at specified future times.

(v) And finally, the expected service regards shall have to be discounted at a specified pre-determined to arrive at their present value. There are practical difficulties associated with this direct measurement of expected future services of employees on an individual basis in a bank

The second technique involves the use of 'compensation' for determining the human resource values. In this method, the present value of future wage and salary payments to the employees for a fixed period of time are multiplied with an 'efficiency ratio' to obtain the total present value of future services of a Bank's human assets

The use of 'compensation' i.e. the total wage and salary payments as a measure of human resource value is subject to certain limitations. The inequalities in salary payments are bound to be reflected in the human asset valuation of the banks and thus, the value of human resources computed by each bank will contain an element of this inequality

A third technique involves classification of the bank's employees in certain homogenous classes, such as Grade I, II, III employees. The past records of salary payments will help in finding out the average earnings of each grade of employees. The average earnings of each grade of employees are discounted to arrive at their present value. The sum of present values of all grades of employees will represent the total value of human resources of the bank Though the procedure of valuation of human resources by this technique is somewhat simple, it has its own limitation in that it gives the value on an average basi. However, the technique assumes that, the employees of a particular grade will stay with the organisation for the period for which their average salaries have been computed. This assumption normally does not hold good in practice. □

(continued from page 23)

at the grassroots level. The scheme assisted in working out a satisfactory solution or mobilisation of resources initiating and accelerating the process of economic development of the backward regions. The scheme is an important means of attaining the social objective of nationalisation, an opportunity to transform banking of the classes into banking of the masses.

The Banking Commission has summed up the problem in the following words "the function of planning and the function of banking are entirely different functions. Banks have operate in a manner conforming to the plan made by the district plan machinery Within the framework of district planning, the lead bank can play the part of a financial leader in providing the banking facilities to the district in cooperation with other financial agences. Considering the facilities at both the planning and execution stage, the district should be incharge of district planning of which credit planning will be integral part. Banks acting in consortium can only help in the preparation of credit plan for the particular district.

Banks could not extend finance to potentially viable projects because of inadequate supply of raw materials and power or inadequate facilities. The solution of the problems depended much on the effective cooperation of Government Departments and development agencies.

Thus, the success of the scheme depends to a large extent on the development of other infrastructural facilities like transport, communications, storage, processing and marketing. Where such facilities are not adequately provided for, the lead banks are bound to have only a limited success □

Iodine for human resource development

Dr. N Kochupillai

Besides education, health and nutrition too play a vital role in human resource development. Iodine is an essential element for the proper growth and maturation of brain. An estimated 120 million people in India today suffer from iodine deficiency, great majority of these being concentrated in the Terai region of U.P., Bihar, and Assam. In this article the author highlights the role that iodine plays in human resource development.

HUMAN RESOURCE DEVELOPMENT (HRD) is the process of increasing the knowledge, skills and capacities of all people in a society. HRD is all-important in the development and modernisation of a country through economic, social, cultural and political growth.

Human resource is developed by promoting education and improving the health and nutrition in a society. Good health and nutrition are crucial for the full flowering of the inherent biological potential of a people ; education enables it to bear fruit. Currently a national debate is on, concerning HRD through education. Even as this highly relevant issue is debated, it is pertinent to look at the other imperatives of HRD, namely health and nutrition of the people.

Iodine deficincey : its effects

Aspects of health and nutrition relevant to HRD, are many and varied. In this presentation the most important among them, namely iodine deficiency is dealt with.

Iodine deficiency is widely prevalent in India. An estimated 120 million people live in known iodine deficient regions of our country. Recent studies in India and elsewhere show that iodine deficiency impairs brain development, saps human energy and hampers developmental efforts. There is evidence to support the thesis that "Iodine deficiency cuts at the very root of the potential for development of a people and thus lead to perpetual backwardness of a region".

An estimated 4 to 15 per cent children born in seriously iodine deficient regions have severe deficiency of an iodine containing hormone called *Thyroxine*, which plays a key role in the normal growth and maturation of brain during conception and first year of life. The demage to developing brain caused by Thyroxine deficiency early in life cannot be corrected subsequently by iodine or thyroxine supplementation.

In addition to the large number of babies born with severe thyroxine definciency at birth, many more are born with relatively low levels of thyroxine in iodine deficient regions. There is evidence to suggest that such babies also stand the risk of impaired brain development.

Results in low IQ

During our many field visits to the iodine deficient villages of the U.P. Terai, we have repeatedly heard reports from primary school teachers on the *poor educability* and high dropout rates of children enrolled at the primary school levels. We, therefore, assessed the *IQ* of school children from a seriously *iodine deficient primary* health centre of the Gonda district, using techniques and norms adapted for Indian villages. These studies showed more than 20 per cent of the children getting scores below 70, indicating retarded mental development Besides an overall left

shift of IQ scores distribution was seen among school children from iodine deficient villages, when compared with school children from villages with no iodine deficiency. The findings reveal poor mental development of school children from iodine deficient regions and match well with the low thyroxine levels seen in large number of babies born there.

and more deafness

Besides mental retardation, *never deafness* is recognised to be a hallmark of brain damage caused by iodine deficiency. We, therefore, tested villages belonging to a seriously iodine deficient region of the Deoria district of Uttar Pradesh for hearing loss due to nerve damage. The results showed that one out of every five persons tested has defective hearing due to nerve damage.

Iodine and HRD

The above scientific findings are corroborated by similar studies done in iodine deficient regions of Bhutan, Nepal, Zaire, Indonesia, Italy and South American countries. Based on these evidences nutritional iodine deficiency is now believed to cause widespread damage to human resource in iodine deficient regions of India and other developing countries, where hundreds of millions of people live.

Eradication of iodine deficiency can promote socio-economic transformation through HRD. This was dramatically demonstrated in the Jixian village of Huachun county in China. In 1985, after 8 years of continuous iodine supply through salt, there was no retarded individuals in the community, below 7 years of age. The performance of children in the village primary school improved so much so that there were no dropouts in 1984 and the ranking of the school, for academic performance, rose from a poor 16th to an excellent 3rd in the county. The per capita income rose from a mere 43 Yuan in 1978 to 508 Yuan in 1984. Gross agricultural produce of the village, which was worth 19,000 Yuan in 1978, rose to 88,000 Yuan in 1984-85.

Nutritional iodine deficiency afflicts an estimated 120 million people in India. A good many of these live in the densely populated Terai districts of U.P., Bihar and Assam. Many of these districts are well recognised for their socio-economic backwardness and tardy development. The widely prevalent and serious iodine deficiency in these regions can impart significant damage to the human resource there. Eradication of iodine deficiency by urgent and effective iodine prophylactic measures is therefore an important and necessary condition for the modernisation of these regions through human resources development. ☐

(Courtesy : All India Institute of Medical Sciences)

Modernisation of steel plants

Durgapur and Rourkela Steel Plants are to be modernised at an estimated cost of about Rs. 990 crore and Rs. 861 crore respectively. An allocation of Rs. 360 crore has been made in the Seventh Plan for modernisation of the Rourkela Steel Plant. This will enable these plants to attain their rated capacities of 1.6 million and 1.8 million tonnes of ingot steel per annum respectively. The Steel Authority of India Limited (SAIL) is evaluating these modernisation proposals.

There is also a proposal to modernise IISCO (Burnpur) at an estimated cost of Rs. 931 crore. This would enable the plant to attain its rated capacity of one million tonnes per annum of ingot steel. However, in view of the overall resource constraints no funds have been provided for this scheme in the Seventh Plan

Population stabilisation around 2050 AD

India's population will stabilise around the year 2050 AD. To achieve the goal, the Government has prepared a well defined strategy. The main features of this strategy are increasing the demand for contraception through improved communication approaches; expanding and improving the quality of outreach services; promoting greater community participation, intensifying population education; enhacing child survival rates; and reorganising programme structure and improving its management.

Our Contributors :

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BOOKS

Resource allocation

Comparative Resource Allocation, Politics, Performance and Policy Priorities. Editors : Alexander J. Groth and Larry L. Wade. Published by Sage Publications, C-236 Defence Colony, New Delhi-110024. price $28. Pages 247.

This book contains eight essays concerning the distribution of social and economic resources in and among nation-states whose political and ideological characteristics, levels of development, size, natural resource endowments and cultural attributes differ dramatically. The systems surveyed encompass Western Europe and the United States, the Soviet Union, the People's Republic of China and other parts of Asia, Africa and also Latin America According to the editors of this tome, allocation can be interpreted in at least two ways. The most common way is in terms of allocating scarce resources, especially budgetary money. The second type of allocation involves the power of conflicting interest or value groups This includes many political polemics such as (i) prohibiting ethnic discrimination or (ii) having capital punishment. Whereas these issues tend to be yes-no issues or issues with finite categories, money-allocations issues have a continuum of alternatives.

One of the papers on China says that contrary to what many people may have believed. Chinese leadership since the revolution has been, despite periodic romantic outbursts, alert to the dangers to economic development of a too-early elaboration of state welfare activity. The diversion of resources from productive applications to the amelioration of social distress has been inhibited by the keen awareness that capital formation and work incentives offer the only long-term hope for improvements in social welfare, properly understood.

The dilemmas being faced by developing countries are graphicaly put in by the authors. Facing, as the People's Republic of China does, the intractable economic facts of limited resources and low productivity, social welfare policy may be less chosen than ordained. For continental China, as for much of the Third World, resource allocations must favour the future (investment) rather than the present (consumption) if there is to be an enhanced future at all.

According to the editors, most governments confront comitments of the past from which resources cannot be shifted easily and a world from which new and expanded resources can be wrung only arduously and slowly. The editors also contend that it is a fallacy to say that governments only can consume, never create, resources. Certain government activity does have productive results and governmental allocations, however much they constrain future elite choices, are often socially beneficial, in fact indispensable, to civilised existence. This perhaps is the nub of which eight evocative essays on allocations were woven well.

In all, the book is a welcome addition to the literature of public finace where the subject of allocation of resources among competing claims has been a controversial issue. Although the book makes an interesting reading the references it drew to dwell upon the theme were disparate and lead to avoidable diversions. The high cost of the book is another deterrent for diligent readers who may not be inclined to invest such a gargantuan sum.

G Srinivasan

Urban economic development

Urban Economic Development, edited by R. D. D. Bingham and John. P. Blair (Published in cooperation with the Urban Research Centre, University of Wisconsin, Milwaukee). Available from Sage Publications India Pvt. Ltd. Post Box 3605, New Delhi-1100024. Price $ 28 00 (Hard back) & $ 14.00 (Paper back). Page 287.

Due to the inherent process of economic development, urbanisation results. Urbanisation gives rise to its own attendant challenges in terms of the living conditions of the people, the mis-match between supply and demand for services, goods, etc. Though urbanisation is a phenomenon experienced the world over, the approaches to tackling the problem differ from nation to nation, depending on the policy perspectives, goals and objectives in this regard. In the case of USA, policies on economic development were becoming more and more of a federal responsibility since the New Deal, right upto the end of the Carter administration. The Reagan administration has attempted to reverse the trend by reducing the overall funding of federal economic development asistance and thus requiring the States to initiate their own programmes in an increasing measure. The effect of such programmes on the urban economy is complex considering the historical perspective of their emergence either through public investments, or through technological advancement or emergence of core activity Centres. The book under review attempts to examine the process by which such urban economic development takes place.

The book groups a total of fourteen well researched papers into four broad categories entitled : (i) Economic Development Paths, (ii) Federal Economic Development Programmes : Analysis and Evaluation, (iii) State and Local Approaches, and (iv) Local Economic Development at work. There is plently for an

economic historian in the first section where the emergence of urban Centres is discussed. In addition the importance of the city as a technological Centre and the future prospects of the city unit emerging into world-class city is delineated. The second section is a critical analysis of the Community Development Block Grant (CDBG) initiated in 1974 and Urban Development Action Grant (UDAG) created in 1977 as US federal initiatives. In addition, a paper on emergence of "Enterprise Zones" in the inner city brings out the merits and demerits of setting up capitalist enclaves in depressed|stagnant urban communities as observed in UK & USA. The third and the fourth section ably bring out the issue into focus as to whether urban economic development promotes or depresses equity. There are though provoking papers regarding the need for taking an integrated view of efforts by all agencies--public, private, universities, corporate and voluntary agencies, with case studies of Baltimore and Maryland.

The book is well documented with references and the authors have given an insight to the historical and contemporary issues in urban development. The Urban Research Centre of the University of Wisconsin Milwaukee and M|s Sage Publications Inc. have done commendable work in adding this collection to the growing literature on urban development.

R. C. Srinivasan

Mortality Studies

AN ANNOTATED BIBLIOGRAPHY OF MORTALITY STUDIES IN INDIA, By S. Abraham and K. B. Gotpagar Published by Himalya Publishing House, "Ramdoot", 12-B, Dr. Bhalerao Marg, Bombay-400004. First published August, 1985. Pages 191. Price Rs. 80.00.

This publication has been brought out on behalf of the International Institute for Population Sciences, Bombay. It is the first of its kind in as much as no attempt has so far been made to collate the relevant material available on the subject of mortality though a lot of literature has been produced on its various aspects in the form of books, papers and what have you.

Indeed the subject of mortality is of great concern and vital interest to public health workers and demographers throughout the world. The authors rightly assert that no component of human welfare is as highly valued as prolongation of life itself in the optimal state of health. Also, planning for improvement of socio-economic conditions in any population depends to a great extent on current data on levels and causes of mortality and future trends. Since such data are generally lacking, India being no exception for this dearth, health measures and programmes are either misdirected or they go half-heartedly.

Arranged in four parts dealing with general mortality and causes, infant mortality, maternal mortality and life tables, the book presents a vast panorama of views culled from various sources. The brief paragraphes put under various heading, giving the source of information, are quite informative and they sustain the reader's interest. If one were to locate information on the subject for further research work, this is the book to scan through.

While the various extracts have been put alphabetically, index at the end of the book is conspicuous by its absence. The editors will do well to fill in this lacuna in the next edition. Also, a bibliography of books which deal entirely or partially with the subject would have added to the utility of this publication. Most of the extracts are from journals. But then, a laborious work like this should not be done in a hurry and an imaginative organisation of material makes it preeminently suited for researchers and administrators. Nevertheless, in its present form it must serve the purpose it seeks to undertake.

Meena Bhandari

Freedom struggle

Dr. Pattabhi Sitaramayya (Builders of Modern India. By Mamdipudi Pattabhiram, Published by Publications Division, Patiala House, New Delhi-PP : 148, Rs. 12.

This compact monograph on life and personality of Dr. Pattabhi Sitaramayya is another welcome addition to the evergreen series "Builders of Modern India" for which its Publisher has earned more or less indelible reputation. Under a changed aesthetical ge-up this paper-back is very attractive. Posterity will surely be grateful for this historic legacy in black and white as and when they ponder over the willing contribution made by this valient son of India's soil towards attainment of her freedom and paving the way for her reconstruction that followed.

Here is very readable account about a great versatile genius who gave up his lucrative medical practice in response to Gandhiji's call for liberation of the mother-land from the yoke of foreign rule. Dr. Pattabhi, initiated into the political arena by Mahatama Gandhi, rose to become later's advisor in the affairs of South India. It was by dint of his unique qualities of thought and action, of approach and involvement, his scholarly knowledge of men and matters, his dedicated spirit of devotion and perseverence that endeared him to Gandhiji who had to remark on Dr. Pattabhi's defeat against Subhash Chander Bose, "Pattabhi's defect is my defeat".

In the light of a lifetime of service to the nation spread over many fields like social work, education, scholarship, political assignments and many other vistas with which Dr. Pattabhi had to associate himself, it cannot be gainsaid that the life and personality of Dr. Pattabhi enshrined in this slender volume constitutes atreatise on solid experience, indisputable truth guidance and Philosophy.

The volume has a readability draped in a style which is peculiarly limpid and impressive.

Quarterly budgeting for Central Government Plan projects/schemes introduced

THE UNION FINANCE MINISTRY is to issue necessary guidelines to the concerned Ministries and Departments for the introduction of quarterly budgeting for Central Government Plan projects/schemes. The aim is to develop a system to ensure that the Central Ministries and Departments spend money on Plan schemes according to a schedule which should be checked on a quarterly basis so that any money unspent in a particular quarter could be made available to other schemes which are in need of additional funds.

The guidelines being issued are:

As soon as the Annual Plan allocations are communicated by the Planning Commission, Ministries/Departments will identify the projects and schemes which will be covered by the quarterly budgeting and breake up the schemes into four quarters.

The quarterly budget will be intimated to the projects executing authorities and agencies well before the commencement of the financial year and shall keep a close watch on the progress of the projects and schemes covered by quarterly budgeting through monthly reports.

So far as the schemes implemented through State Governments are concerned, it is being made clear that unless schemes are implemented according to schedule the funds allocated to them for the schemes are liable to be withdrawn for deployment elsewhere. The decision on such diversions will be taken by the Cabinet Committee headed by the Union Finance Minister with Minister of Programme Implementation and Deputy Chairman, Planning Commission as Members. □

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Flood control measures during Seventh Plan

THE TOTAL AREA liable to flood in the country is estimated at 32 million hectares. At the beginning of the Sixth Plan, the total investment on flood control programmes (since the First Plan) was Rs. 976 crore and the benefit-areas were estimated at 11.2 million hectares. As against this background the Sixth Plan envisaged a target of 4 million hectares for protection from floods and the investment proposed was Rs. 1045 crore. However, a review of the implementation of the programme revealed that the physical coverage likely to be achieved in the Sixth Plan would be only about 2 million hectares. The anticipated expenditure on the programme during the Plan period was Rs. 970 crore (as against the approved outlay of Rs. 1045 crore).

For the Seventh Plan the proposed target for flood protection is 2.5 million hectares. An outlay of Rs. 947.39 crore has been made for the Seventh Plan period. Of this Rs. 726.38 crore will be for the State sector; Rs. 149.93 crore for the central sector and Rs. 71.08 for the Union Territories. Besides protection of towns and important installations, anti-erosion measures to stabilise the benefits from the existing schemes would also be taken up. □

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Socio-Economic Scene
Justice V. R. Krishna Iyer
Dr. L. K. Jha
Dr. Bhabatosh Datta
Dr. Malcolm S. Adiseshiah

Rural Scene
Mohit Sen
Dr. Kamal Nayan Kabra
S. K. Dey
Bunker Roy

Socio-Political Scene
Romesh Thapar
Jyoti Basu
Vasantha Surya
K. A. Abbas

Social Pattern
Dr. Jamal Kidwai
Nirmal Mukerjee
K. F. Rustomji.

"When 'Gods' eat the forbidden fruit, the syndrome of communal politics and the pathology of power Grab morbidly manifest, resulting in conflicts and tensions, fanaticism, fundamentalism, primitivism and medievalism. Destabilisation, disintegration and even threats of secession are the consequences. With Tamilnadu, Assam, Khalistan and Gurkhastan as our historical experience, the lesson is grim. The Partition of India was the product of these forces, the sub-partition of India that is Bharat is very much a portent for similar reasons. If the Indian masses unite, proletarian solidarity may ensue and the unborn Revolution may be midwifed before 2001 A.D. To fragment the people and weaken Socialist Republic is a good investment for the proprietariat at home and neo-imperialists abroad. Does the Muslim League, its Hindu counterpart or Christian camouflage weep for their pariahs or are tools of their elite ? *Talaq* to Socialism and *tilak* to Capitalism is the role of communalism. Secularism can win and religionism retreat only if a movement for humanism, scientific temper, the spirit of enquiry and reform, compassion for living creatures, renunciation of practices derogatory to the dignity of women gets into swing with the masses celebrating these values."

JUSTICE V. R. KRISHNA IYER

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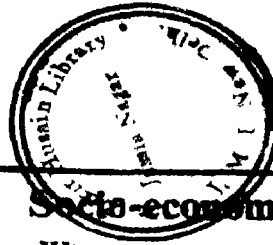
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Socio-economic scene

Rural scene

Socio-political scene

Social pattern

Faith in future

Before long—hardly a decade and a half from now—we will have entered the 21st century. Whether the remaining 15 years of the 20th century will be gloomy or gleaming, depends on the behaviour of the thinking humans of the globe. We know that future is a dormant continuation of the present, as present is an extended continuation of the past. Time is indivisible ; we have divided Time for our convenience. We have made divisions of Time, as we have done of Space, for our objectives and ambitions. And, in order to achieve our objectives, to reach our targets, we have to keep a time-frame before us.

Since Time waits for none, we, as a nation, have to keep pace with it. To march forward is a must. despite the dust of despair raised by prophets of doom. No doubt, our problems are enormous, but our resources are far more enormous Poverty, unemployment, illiteracy and disease are not new phenomena. Compared to other developing countries, these scourges in India are under greater control Much has been done here to wipe them out. Much more has been seriously planned in this direction in the years to come.

The fact is that ours is such a vast country that anything can be proved if we choose to see only what we are looking for.

At several places in our metropolitan cities, multistoreyed buildings, studded with the latest designs in architecture, and rag-mounted slums, run parallel. The solution of the problem is not to pull the high-rise buildings down, but to construct low-cost houses for millions, so that the slums do not exist.

Believe it or not, rural India is making progress Roads have reached the remotest places. Tractors are tilling the soil where once man and the ox ploughed the land. The Indian farmer was always conscious of his responsibilities; but now that he is aware of his rights also, speaks volumes of the advances in Communication and the ever-expanding net-work of Information

Our Industry, supported by science and technology, has discovered new horizons Indian industrial products have steady markets both in developing and developed countries. To be brief, if the list of failings is long, the inventory of achievements is much longer

But, for a big country like ours, enough is never enough. A little but sincere heart-searching will convince each one of us that we have to be more honest and less selfish, more genuine and less sham, both in word and deed. That will, perhaps, help us in peeling off the foil of frustration that we may have wrapped around us. We have been quoting and even relying, more often than not, on the assessment by others of our failures and successes. But, let us agree that sincere self-assessment is the best. On 15th August, 1986, our Independence Day, let us make a resolve to assess ourselves truly, and march ahead, with a firm faith in future. Let us accept the fact that nothing can be gained by decrying, giving up hope, by harbouring fears of havocs and hazards that may or may not occur. The history of civilisation has taught us the unforgettable lesson that success in every field of quest or conquest was built on hope—the hope for a better and brighter tomorrow.

—Chief Editor

Socio-economic scene

What do we need to mould kismet of India 2001

Justice V. R. Krishna Iyer

"India, today, is free; but Indians are not. Not wholly. They have 'miles to go', and 'promises to keep', if 2001 A. D. is to greet a nation committed to a revolution of liberative values and conscientiously pursuing dynamic processes to reach its radical goals. The future beckons; but the past and present drag back", feels justice Iyer and he cautions, "If you play false to the 20th Century you will stand charged at the bar of the 21st Century with breach of trust". He however, hopes that "with democratic invigoration from inside and political invigilation from outside, the national congress leadership and the intellectual collective from all parties and outside will mould, with people-oriented courage and socialistic conscience, the "kismet" of Bharat 2001 A.D."

THE PEREMPTORY IMPERATIVES OF OUR INDEPENDENCE demanded fulfilment, and so, 'We, the people of India' made a tryst with destiny for the deliverance of Indians in the trinity of dimensions—political, economic and social . Now the time comes to audit the direction of our nation's locomotion and to predict the prospect of reaching the destination set by the Constitution. We are a Sovereign Socialist Secular Democratic Republic, and each of these pregnant adjectives interrogates us: Whither? We are a sixth of the whole of humanity bonded into a Fraternity assuring the dignity of the individual and the unity and integrity of the nation; and the Constitutional principles 'fundamental in the governance of the country' charge the State under Art. 38 'to strive to promote the welfare of the people by securing and protecting as effectively as it may, a social order in which justice, social economic and political, shall inform all the institutions of the national life'. More particularly, the Constitution commands that 'the state shall strive

to minimise the inequalities in income, and endeavour to eliminate inequalities in status, facilities and opportunities, not only amongst individuals but also amongst groups of people residing in different areas or engaged in different vocations.' As we navigate towards the next century, do we bear true faith to this fundamental pledge or is our journey a jejune exercise in fatal truancy and rhetorical baloney? Let us examine the dynamics of the social forces at play, analysed from the dialectical angle, and forge a new synthesis, whereby the escalation of frustrations *aggravated* may be transformed into a revolution of aspirations *accomplished*.

"Our progress towards the target in the socio-economic sphere must, however, reckon with global forces at work. No nation can advance in isolation, nor ignore the pushes and pressures of imperial powers and hegemonistic intimidators, their proxies and proteges".

miles to go...!

India, today, is free; but Indians today are not. Not wholly. They have 'miles to go' and 'promises to keep, if 2001 A.D. is to greet a nation committed to a revolution of liberative values and conscientiously pursuing dynamic processes to reach its radical goals. The future beckons; but the past and the present drag back. Our progress towards the target in the socio-economic sphere must, however, reckon with global forces at work. No nation can advance in isolation, nor ignore the pushes and pressures of imperial powers and hegemonistic intimidators, their proxies and proteges. But principled policies in relations with other nations, holding fast to the basics of our own Freedom Struggle and to the compulsions of our socio-economic goals, cannot be abandoned or adulterated, if history is not to hold us guilty. If you play false to the 20th century you will stand charged at the bar of the 21st Century with breach of trust. There is an integral yoga of national and international commitments. You cannot be anti-imperialist abroad and anti-socialist at home. You cannot be anti-apartheid in Africa and anti-harijan in India. You have to choose your friends and make your judgement without sacrificing independence and development, socialist direction and democratic decision-making. On our unhappy earth there is the Third World with developmental potential but still facing deprival, through foreign manipulation, of the full utilisation, along modern lines, of its natural and human resources. Indeed, there is a Fourth World within the Third World consisting of the socially depressed classes and the most exploited proletariat. If India's socio-economic structure is to be transformed into a democratic socialist society, it must establish an activist solidarity with the developing world, play a leading role in the Non-aligned Movement and, weave close nexus with the socialist countries. Indian humanity can achieve true deliverance only if it establishes activist identity with those nations and peoples struggling or standing for a developmental order with entitlement to distributive justice for all its citizens as part and parcel of the social order. From this perspective, India is fortunate because we, as a big country, stand for an international order of peaceful co-existence and against cold war tensions. We have been fighting nuclear neurosis and armaments-race politics. We have been jealous about our sovereignty, refusing to be highjacked into militarist mendicancies, ambushed into ideological blocs, bullied into surrender to multinational corporations. We have negated (?) privatisation of the national economy and "The West is the best" colonial process, pressure and propaganda to the contrary notwithstanding. Taking stock of the current situation, we must take credit for the success of the Nehru foreign policy, which mirrors our socio-economic goals at home. Barring some wobbling during the Janata spell, our national leadership has been broadly closer to the left forces of the world. The Rajiv Gandhi vision of foreign relations has stabilised more or less on the basic moorings which are the Nehru legacy. The last lap of the 20th century will, other things being equal, usher us into 2001 A.D. more sharply against imperialist terrorism and more firmly in the camp of peace and self reliance for the Have-not World. But there is a *mareecha* factor : the alcoholic illusion of technological friendship with imperialists will bring our masses to higher levels of prosperity and distributive justice. This self-deception of our glossy coterie at the helm is a fatal jeopardy for the country.

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shun imperialist forces

Any soft foreign policy towards the U.S. using the high-tech alibi will be a back-door entry with electronic speed, by seductive T.N.Cs (Transnational Corporations) subversive of our socialist fidelity. The pressure on our frontiers through Pakistan and instigation of extremists and the secret fillip to disintegrative factors forcing the diversion of our

national attention and resources cannot but damage our developmental advance towards self-reliance, sovereignty, economic democracy and social justice. No doubt, science must be harnessed to society's productive processes but economic concubinage with transnational corporations will result in genetic engineering with a capitalist focus. Our National Plans will be pilgrim expeditions to Dollar Cathedrals; our science advances but technological beggary thro' Washington's charity; our citizens' health the plaything of pharmaceutical TNCs; our higher education campuses only passport offices processing 'brain drain' operations. And our monopolist industries, with new "growth" liberties and America (Unlimited) India (Limited) will chemically control our population through multiform pollution. Our freedom will be free as long as U.S. is happy with us and our Development self-reliant subject to World Bank dependencia syndrome. Even our intelectual creativity, critical faculty and Swaraj sensitivity will wither away. Then, for sure, Future shock*

2001 A.D. Unless swadeshi in science and technology asserts itself against U.S. colonisation, high-tech collaboration will end-up in Have-not India becoming a subsidiary' of America Incorporated When borrowed technology becomes cultural opium, the tycoon elite will sabotage our nationalism. We desiderate a social order where Man matters and appropriate technology towards that end M.N.CS backed by brow-beating, blackmail and blandishments, seek to establish a profit-oriented industrial ethos allergic to socialist humanism. The fall-out of wrong foreign policy, beware !

dear fundamentals

Again, another relevant factor, viz., the politics and economics of power. The story of freedom and justice in a given society must cognise all the circumstances which mould its property relations. Culture is not autonomous and is shaped by several human factors. This holistic view is scientific and demands a realistic appraisal of the broader politics as the base on which the edifice of the future depends However, the power process, if Indian identity is not to be impersonated, shall not forsake certain fundamentals which are too dear to be negotiable. What is that constellation ? Firstly, India is a pluralist society, a reality which cannot be wished away. It has ethnic, linguistic, religious, cultural, regional and other diversities which must imaginatively be accommodated with federal flexibility, if friction and flare-up, explosion and secession are to be obviated and a happy family ethos generated. How do we fare ? Steam-roller uniformity or fraternal diversity or mindless drift ? A second fundamental is a passionately felt national unity and integrity, not in abstracto but in living vibrancy. If India is dismembered, Indians will perish, a process which will be accelerated by outside adversaries unhappy to see our country strong and our people unbreakable. Destabilisation processes, currently active, must, therefore, be resisted as a fatal pathology, with Jai Hind in our blood. The third fundamental is the fostering of a cementing culture of social cohesion, tolerance, equality and availability of justice

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secularism, our basis

Indeed, the collective personality of many communities deserves to be defended, if India is to be a joint family of equal cultural co-parceners. For this, secularism is a sine qua non binding as much on the minorities as on the majority. Every religion must accept a certain discipline and must withdraw, as extra-religious domain, from temporal affairs as clearly demarcated in Art. 25 which guarantees freedom of religion and conscience. 'Render unto Caesar the things which are Caesar's; and unto God the things that are God's' is a classic test of secularism with a Jeffersonian wall of separation in between. Matters of public order, morality, health, equality, human dignity and other basic rights are secular, not sacerdotal. Likewise, regulation of economic, financial, political and other secular activity, even though associated or mingled with religious practices, are part of the 'Police Power' of the State A feudal society, with a history of religious totalitarianism, surely accumulates philistine and barbarian customs which must be sloughed off by the progressive conscience of the people. Social welfare and reform as well as *decencies of administration, even in religious institutions* belong to the State's jurisdiction. No doubt, every group has the right to establish and maintain institutions for religious and charitable purposes and to manage its religious affairs, including acquisition and administration of property. But this fundamental right of a religious group is subject to paramount proprieties spelt out in Arts. 25 and 26, including the need to prevent mismanagement

*A FOOT NOTE : Prime Minister Rajiv's brave lead against Reagan's bullying bombings on Libya and Pretoria's terror held on Namibia are a good augury for the next century To falter is to flounder and to founder. From Gandhiji to Shri Gandhi and Beyond, must be Swaraj for all nations.

and malversation of material assets of religious denominations, be they 'majority' or 'minority'. Indeed, the Indian Constitution guarantees cultural and educational rights of sections of citizens *bound together by language and culture* and even goes to the extent of conferring special rights on minorities to establish and administer educational institutions. It must be noticed that these 'minorities' are conferred such rights more to protect and promote their cultural identity in so far as it hinges on religion and language. Although the courts have exaggerated and distorted these minority guarantees through interpretive pedantry and sub-conscious prejudices, the broad thrust is that the right to religion (and irreligion) is inviolable; the right to cultural identity impregnable and the limiting secular principle equally invincible.

"Secularism is a sine qua non binding as much as the minorities as on the majority. Every religion must accept a certain discipline and must withdraw as extra religious domain, from temporal affairs as clearly demarcated in Article 25 which guarantees freedom of religion and conscience".

the clear demarcation

Mitre and Sceptre have clear frontiers and the National Charter forbids divine invasion beyond things of the spirit and relations between man and his Maker. Any excess beyond these bounds indulged in by religious communities upsets the secular balance, breeds angry bigotry and produces resentment, disharmony and rivalry. When 'Gods' eat the forbidden fruit, the syndrome of communal politics and the pathology of power Grab morbidly manifest, resulting in conflicts and tensions, fanaticism, fundamentalism, primitivism and mediaevalism. Destabilisation, disintegration and even threats of secession are the consequence. With Tamilnadu, Assam, Khalistan and Gurkhastan as our historical experience, the lesson is grim. The Partition of India was the product of these forces, the sub-partition of India that is Bharat is very much a portent for similar reasons. If the Indian masses unite, proletarian solidarity may ensue and the unborn Revolution may be midwifed before 2001 A D. To fragment the people and weaken Socialist Republic is a good investment for the proprietariat at home and neo-imperialists abroad. Does the Muslim League, its Hindu counterpart or Christian camouflage weep for their pariahs or are tools of their elite ? *Tulaq* to Socialism and *tilak* to Capitalism is the role of communalism. Secularism can win and religionism retreat only if a movement for humanism, scientific temper, the spirit of enquiry and reform, compassion for living creatures, renunciation of practices derogatory to the dignity of women gets into swing with the masses celebrating these values. Are there signs in the sky ?

.. but the grim realities

Let us take a close look at the contemporary realities. Caste is writ large, religious fun berserk and godism spreads its pollutive net on schools and colleges, hospitals and medical research units, orphanages and homes for the old, fed by State subsidies, foreign funds and communal collections. The Christians (2.43 per cent) have a large slice and muslims (11.35 per cent) with moghul memory and Gulf money are following fast. The Hindus (52.6 per cent), vivisected by caste fights, along by penury and humbled by missionary muscle and Islamic proselytisation tidings, go revivalist and communalist with a new discovery of old shrines and ready to shed blood panicked by the politics of appeasement. Secularize or perish is the message. Long years ago, Vivekananda described Kerala a lunatic asylums, shocked by the sharp case divisions and communal malpractices. Today India, as a whole, answers that description.

common civil code, a cure ?

Political parties set much store by godism—a blended brew of religiosity, orthodoxy, hunger for power, nepotistic engineering of office and communal cover for Operation Lucre. Ministers and public officials, politicians and parties with few exceptions, student organisations, trade unions, women's associations, sports clubs, arts clubs, newspapers and cultural centres, even whole universities plus plus have their communal flavour and caste colour. We keep alive, thro' a plurality of diverse personal laws, the sense of separateness. The Constitution, precisely to foster unity, commended, that a common civil code be enacted. One citizenship, one system of law. But myopic pragmatism, intoxicated with electoral vested interest, looms larger than the wisdom of the Founding Fathers and suffers claims for Muslim Code, Sikh Code, Christian Code and what not. There is some hope. *Women of all religions*, and great muslim intellectuals with secular fervour now stand up for their human rights and make common cause against legislative discrimination against muslim sisters. The working class movement uniquely met recently at a Trade Union Convention against Communalism and Divisive Forces to discuss Punjab and like issues of national solidarity and to beat back destablising forces, religious, linguistic, etc. This realisation is of far-reaching meaning. Another heartwarming circumstances is the assurance by the Prime Minister, per-

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sonally secular every cell, that a Common Civil Code, facultative to begin with, will be legislated soon. Again, within India, a new church, with liberation theology and democratic ideology is burgeoning. Mixed marriages, though minimal, meet with less communal hostility these days.

The pity is that official functions, radio stations, party symbols, selection to the highest offices, contributions to religious institutions, distribution of holidays are all publicly communal. Animal sacrifices in Marxist Bengal and Tripura, feminine nudity in worshipful processions in Janata Karnataka and so on plus the multiplication of mosques with Gulf money, of churches and chapels with foreign funds and the temples and shrines by Hindu tycoons are dragons' teeth sure to end in friction, tensio nend blood lend. And the State fails to control religious charities, temples, mosques and churches thro' a common secular legislation.

the great divide

A small but protentous point. The Constitution confers rights on religious and linguistic minorities to establish institutions, obviously to preserve their cultural identity built on the two pillars of language and religion. However, by a perversity of semantics, the higher judiciary in this country (will it reverse this egregious error ?) has built phoney fortifications around this limited fundamental right. Who is a minority ? Any industrial adventurer or hoarder of black money or communalist money-bag who invests in an educational enterprise ? Should he be democratically chosen as representative of the minority community in whose name he starts an institution and seeks privileges ? Secondly, can any college or institute altogether unconnected with culture, language or religion peculiar to the community be called a right of the minority ? How can we consider a medical college or technological school—not a seminary or (minority) language centre—a minority's special institution immune to state regulation which applies to majority or public sector institutions, merely because its private proprietor belongs to a particular religion with all the commercial vices of educational merchants ? Another pathology From the age of 3, when the child is admitted to an expensive child-care home or L.K G. charging fancy prices, to the adult age of studentship in highbrow colleges, a class-consciousness is created with the biases of Doon culture. The pariah sector send their children to shudra-institutions, while the patrician bracket sends its candidates to campuses of snobbery. What a Great Divide in the Socialist Republic !

and the casualty !

India of the 20th century, as stressed by Gunnar Myrdal, is a soft State and its developmental and administrative machinery stagnant and corrupt. The chronic feeling of pervasive political delinquency of massive slush money, hush money and spoils system is rising in geometrical progression. Some parties excel others but all politics, geared to expensive electoral campaigns, is smeared by fund-raising temptations from business sources, making the people believe that capitalism is socialism, that the Private Sector alone is a success and the Public Sector a disaster. While coca cola economists with laissez faire penchant lobby for more power for private monopoly despite Art. 39(b) and (c), Nehru is too much with the nation for these 'Neos' to jettison his thought from Government. Distributive justice is a casualty with all-starred millions and five-star millionaires. Green and White Revolutions with Kulaks on the increase ! Developmental *maya* ! With Press barons and Doodarshan, 'fair is foul and foul is fair'.

of right to know

Our open Government flourishes with official secrecy and non-information or doctored truth. Why no Freedom or Information Act but vintage Official Secrets Act ? Even Parliament, prudently 'patriotic', rarely discusses critical items. May be, Parliament should not know these secrets. Surely then, the nation itself shall not know. Then who ? Only the Generals ? The Popes of nuclear science ? The Sircar's conscience-keepers whose darkling dealings make or mar the people's destiny ? James Medison is valid under the Indian Constitution :

> "A popular government, without popular information or the means of acquiring it, is but a prologue to a farce or a tragedy, or, perhaps both. Knowledge will forever govern ignorance; and a people who mean to be their own governors must arm themselves with the power which knowledge gives."

Before the 21st century swoops down on us we must be sure of our fundamentals And yet, in the last lap of the 20th century, with developmental discontent, technological enslavement, mafia manipulations, communal manoeuvres, totalitarian regimes, demoralisingly encircling of our land and the ruthless citadel of transnationals master-minding the decline and fall of non-aligned nations, should we suffer the AID Syndrome of secrecy in the processes of Public Power and uncritical allegiance to informational subservience ? What is fundamental to our fundamental rights is the *right to know*, when alone 'words come out from the depth of truth', 'knowledge is free' and 'the clear stream of reason' will fertilise our Republic.

"With Tamilnadu, Assam, Khalistan and Gurkhastan as our historical experience, the lesson is grim The Partition of India was the product of these forces, the sub-partition of India that is Bharat is very much a portent for similar reasons"

social justice values

We, the People shall reverse this pernicious process before the cross the century barrier. Gandhiji inspired *swadeshi* and desiderated decentralised power process Nehru inspired the Public Sector as a step in aid of socialist change. Indira Gandhi never gave up this creed, although somewhat ambidexterous in practice and brought in nationalisation and legislation against poverty and pollution of environment. The full-blooded and aware support of the people—a democratic social technology—alone can bring about this change. The 'Left' parties left by the wayside and lost in loquacious plurality, is busy writing their lonely obituary. Therefore, a massive upheaval of social justice values bypassing political labels is the answer. India will arise and there are signs. The

"*Talaq* to socialism and *tilak* to capitalism is the role of communalism. Secularism can win and religionism retreat only if a movement for humanism, scientific temper, the spirit of enquiry and reform, compassion for living creatures, renunciation of practices derogatory to the dignity of women gets into swing with the masses celebrating these values".

nulitant movement of dalits, of slum-dwellers and pavement-squatters is testimony. The extremist elite with foreign fuel has short mileage.

When you measure the democratic content and quality of our social order, do remember our failures which, if not remedied, may lead us to the limbo of authoritarianism, apathy and eclipse. These grave shortcomings affect our future and are (a) corrosive corruption, (b) denial of decentralisation and pluralism in the power processes, (c) the culture of genuflexion, (d) the seeping insensitivity to human rights and the conquering heroin of vulgar hedonism at once omnipresent and omnipotent. Of course, social justice, the soul force of our Republic, challenges the robed brethern for their long delayed legally rendered functional fraud; and Parliament itself is discrediting the judiciary with Bhopal-type legislation and Ansari speeches.

the portents

Open collection of colossal funds by merchants of socialism from the corporate sector, virtually legitimising black-money, and black-marketing through benami loopholes, bearer bond schemes and company law amendments, is bad omen. Pretentious anti-corruption legislation and raid hardly inspire credence, because every one knows that the law is dead or dubious when it meets Power 'red in tooth and claw'.

And now, a youthful Prime Minister has taken over. He has made some bold imaginative decisions on sensitive issues *a la* Assam and Punjab which has won admiration for him (and some egregious blunders like the Muslim Bill). His foreign policy and leadership of the NAM also has boosted the morale of the people. However, his image is, at best, a 'deemed' socialist and, at worst, a salesman of high-tech yankee *vidya*. He is more sinned against than sinning, his coterie being the real deviants, they say. He can rise to *feel* for the people. The focous is not on one man. The nation must rely on collective leadership and self-criticism. Unfortunately, the Party in power hardly practises inner democracy even as other parties are artists of chaos. Let us face facts. Political agents of privatisation of the economy, partyisation of administration and magnetisation of industries towards multi-nationals are hopeful of total counter-revolution by 2001 A.D. How? By nugging the progressives in the three branches, drugging the fundamentalists who dividing the masses into communal rivalry, debunking the public sector as sick instead of healing it, emasculating the socially sensitive civil servant into ministerial valets, seducing the youth with heroin culture and dollar glitter into 'contras' of our Gandhi-Nehru heritage and Vivekananda youth power, fragmentation of all Left politics into nuisance-value inconsequence and bruiting about the myth of the birth of the 21st century as food for all, work for all, health for all, happiness for all, thro' the magic wand of computer technology and the heady wine of import policy. Strategies of constant territorial irritants urging disintegration and agitational destabilisation are being planned by enemies abroad and quislings at home, proxies in the neighbourhood and plotters with friendly masks and foreign finance But, with democratic invigoration from inside and political invigalation from outside, the national congress leadership and the intellectual collective from all parties and outside will, I hope, mould with people-oriented courage and socialistic conscience, the kismet of hBarat 2001 A.D

No revolution works without a principled down-to-earth theory. Where is it? 2001 A.D. is no

"Caste is writ large, religions run berserk and godism spreads its pollutive net on schools and colleges, hospitals and medical research units, orphanages and homes for the old fed by State enbirdles, foreign funds and communal collections".

astrologic millennium and opium is no optimism. Dialectically speaking, the Indian social order is ripe for a quantum jump towards a crimson human order. And history, with uncanny power, will find the right leadership ignoring babels and labels. Victor Hugo comes to mind as I envision the dawn of the 21st century :

> "THERE IS ONE THING STRONGER THAN ALL THE ARMIES IN THE WORLD : AND THAT IS AN IDEA WHOSE TIME HAS COME." □

The going is good, let's now carry forward !

Dr. L.K. Jha

We have done quite well and should feel proud of our achievements, says the author, and adds, this initiation of process of reforms to rejuvenate the economy must be continued with more vigour and determination. We must, he pleads, say good-bye to our lethargy, inefficiency, dogmatism and get set to celebrate August 15, 2001 as "a modern developed economy and not as a developing country in need of external assistance."

FOR THREE DECADES AND A HALF, we have been engaged in planned development. In another decade and a half, we shall be in the 21st Century. What will India be like in the year 2001 A.D. when the national flag is unfurled by the Prime Minister on the Red Fort at Delhi on Independence Day ?

There are two ways in which the question can be answered. One would be to attempt an extrapolation of past performance to present a picture of the future. The other would be to consider not what the shape of things to come would be like, but how we can shape things to go the way we want them to, in order to fulfil our hopes and aspirations. The former approach would be deterministic; the latter would call for determination. Those who have faith in planning must opt for the latter.

However, even if we adopt the former course, I see no reason for arguing, as some do, that India will become a land of two nations, the rich and the poor. Those who draw a "poverty line", based on certain statistical concepts, to show what a large number of people are still below it, tend to ignore the evidence of the tremendous improvement in the living standards of the people as a whole compared with conditions in the middle of this century.

When we became independent, India was the largest exporter of vegetable oils, because at that time only a tiny percentage of the people could afford to have any oils and fats in their daily diet. Today we are the world's largest importers of vegetable oil, not because of higher consumption by the rich, who were consuming enough of it even in the past, but because of the vast increase in the number of people who

now include it in their daily consumption. Something similar can be said of the consumption of items like sugar, shoes, bicycles, electric fans and even scooters. To contend that the fruits of development have not reached the poor is to overlook the realities on the ground.

A somewhat similar misconception prevails among those who highlight the contrast between urban and rural areas. For example, the point is often made that only about 40 per cent of Indian villages have been electrified so far. Not many people know that this level of rural electrification was achieved in the

"Those who look at the problem mainly in terms of narrowing the contrast between the haves and have-nots (so-called) often come out with faulty policy prescriptions. Instead of proposing ways to improve the lot of the poor, they urge curbs on those who are doing better. Instead of attacking poverty, they attack wealth".

USA many years after World War II had come to an end, while in 1933, about 90 per cent of rural America was without electricity. Surely, there is no cause for self-flagellation on account of our rural electrification record.

In saying all this, I am not suggesting that special efforts are not needed to eradicate poverty. Of course, they are. But those who look at the problem mainly in terms of narrowing the contrast between the haves and have-nots (so-called) often come out with faulty policy prescriptions. Instead of proposing ways to improve the lot of the poor, they urge curbs on those who are doing better. Instead of attacking poverty, they attack wealth.

what we need most !

The most important asset which we need for launching an effective assault on poverty and taking the country forward to the 21st Century is a feeling of self-confidence. We must have a sense of pride in our achievements and not just dwell on our short-comings. It is no mean achievement that in contrast to the near stagnation in the first half of this century, after we embarked on planned development, we had an average compound rate of growth of 3.5 per cent between 1950 and 1980. Raj Krishna used to deride it as the Hindu rate of growth, because he rightly wanted us to do better. But it does not compare badly with the rate of growth in the developed countries in their early years of development. What we must also remember is that more than 90 per cent of the resources for the purpose were mobilised internally, not derived from imperialistic exploitation of other countries, or an abundant inflow of capital from outside. Further in the 80's, we have achieved a significant step-up in our rate of growth when in the rest of the world, the developed countries had a dip in their growth rates, which at times turned negative, while many developing countries, with much higher incomes than India, were in a debt trap.

India now has a respectable ranking among the industrialised countries of the world. Our industries produce almost all of the consumer goods we need, as also a wide range of capital goods, heavy machinery, power plants—conventional and nuclear—aircraft and ocean-going ships. In agriculture, it was widely believed that the Malthusian prediction of population outstripping food supply would come true in India. Today, we have a surplus of foodgrains, even though a failure of monssons an ddrought conditions have afflicted many states in the country.

While we cannot and must not under-rate our achievements, we cannot take a complacent view either. We have a long way to go before we can claim to have freed the country from endemic poverty. Prime Minister Rajiv Gandhi has set before the nation the target of achieving this goal by the turn of the century. In his very first broadcast to the nation after assuming office, he declared, "Together we will build for an India of the 21st century." On another occasion, he said, "Poverty, as we know it, will be a thing of the past by the beginning of the 21st century."

tackling the weaknesses

To fulfil this target, it would not be enough to rely on the momentum for development built up in the past. We must accelerate the pace of progress. Even though our overall performance has, as I have argued, been good, even laudable, there are many short-comings and weaknesses which we must get rid of. And it is to these that I turn now.

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When we began planning, the shortage of savings was identified as the main hurdle in our way. People with low income could save but little. The level of savings was less than 10 per cent of the GDP. Through heroic efforts, which entailed the imposition of a heavy tax burden on the people, the rate of savings was more than doubled by mid-70's to above 20 per cent of the GDP. But the rate of growth did not double. Instead the capital output ratio went up.

This deterioration was the result of inefficiency in the use of capital. There were many factors contri-

buting to it. Not the least important of them was the climate of public opinion in the country which judged each plan by the number of new projects and programmes that were included in it and the step-up in investments which it envisaged. Little importance was attached to getting more out of the investments already made. The emphasis, in other words, was on higher outlays rather than on higher output.

To no small extent, the administartive instrumentalities devised to fulfil plan targets and objectives were contributing to inefficiency and the low productivity of capital. While the Industries Development and Regulation Act had been designed to conserve scarce capital and ensure that it flowed into the priority sectors, over time in its application it began to restrict production out of installed capacity.

The MRTP Act which was aimed at preventing monopolistic trends and restrictive trade practices, in fact, began to strengthen them. It shielded the bigger business houses from competition which could only come from other big establishments and not from the smaller fry. Restrictions on their output placed under the Act gave legal sanctity to the monopolistic practice of curtailing production to maximise profits.

Restrictions on imports to conserve foreign exchange raised domestic costs and prices and made Indian industrial products uncompetitive in world markets. Coupled with the lack of competitive conditions and chronic shortages internally, to which various controls including import control contributed, the net impact of various measures taken to conserve foreign exchange was probably negative rather than positive on our balance of trade which has shown persistent signs of deterioration.

In any event, there is little doubt that the multitude of controls and regulatory devices, well-intentioned though they were, had an adverse effect on the capital-output ratio. If nothing else, the very time taken in the clearance of any worthwhile project, whether in the private sector or the public sector, by all the controllers and departments concerned, led to tremendous delays in their execution and time over-run went hand in hand with cost over-run.

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public sector, and black money !

The decline in the efficiency of capital utilisation had an unfavourable impact on capital formation too. The return from the huge investments in the public sector which was expected to make a significant contribution to the resource pool, did not materialise. In fact, a large number of public sector units began to lose money instead of making profits. The attempt to improve their performance by stricter supervision and controls exercised by the Ministries under which they were located only led to a further decline in their efficiency. As, in consequence, the resource gap widened, tax rates were jacked up not only from plan to plan but from year to year. Soon, this effort too began to turn counter-productive.

"The return from the huge investments in the public sector which was expected to make a significant contribution to the resource pool, did not materialise. In fact, a large number of public sector units began to lose money instead of making profits."

The high rates of direct taxation, while they hurt the honest, the salaried class and the self-made professionals, were avoided and evaded on a massive scale by the affluent and resourceful. A "parallel economy" developed to which the resources which should have contributed to development began to leak in an increasing measure. There are formidable estimates in existence of the amount of black money in the economy. The raising of indirect taxes too had their own adverse effects. They were becoming increasingly regressive, hurting the poor more than the rich. They were raising costs of the very plan projects and programmes which they were supposed to finance. They were crippling the competitive capacity of Indian industrial products in export markets. They were also providing temptation and opportunities for large scale evasion and avoidance.

That despite these adverse trends and weaknessee, India's economic performance continued to be as good as it has been is certainly a matter of satisfaction. At the same time, it underscores the possibilities of a substantial quicking of the pace of our progress if the shortcomings are removed.

the reform process

Towards this end, Prime Minister Indira Gandhi initiated a process of reform in economic administration laying special emphasis on productivity. After her, Prime Minister Rajiv Gandhi has reinforced this effort and given a call for some far reaching changes.

In his first broadcast to the nation, he said that the public sector has "to become more efficient to generate surpluses for investment", and the private sector "should acquire the strength competition provides by reducing costs and absorbing new techno-

logy". In his second broadcast on January 5, 1985, he declared, "Improvement in productivity, absorption of modern technology and fuller utilisation of capacity must acquire the status of a national campaign". He further indicated that "rules and procedures will be drastically simplified to speed up the decision-making. He has also emphasized the importance of decentralising decision-making.

Since then, many controls have been relaxed. Import policy has been liberalised. Greater autonomy is being given to the public sector. Hi-tech industries have been introduced. Attempts are also being made to upgrade the quality and technology of industrial production as a whole. In the last two budgets, the rates of direct taxation have been lowered and a process of reform of indirect taxation has been initiated to eliminate cascading effects.

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We should look upon these measures not in isolation but as integral parts of a new development philosophy which lays greater emphasis on the human factor—the workers and managers, technicians and scientists than on capital and budgetary allocations as a resource for development. Such a change in emphasis is necessary if we are to accelerate the rate of growth and to recognise the financial constraints we are facing. In the Seventh Plan, we are clearly over-stretched in regard to budgetary resources and the deficits are giving rise to concern over the possibilities of inflation. If we want to raise the rate of growth to 6 per cent per annum in the 90's, we can do so not by raising the input of capital but by raising its output. The incremental capital output ratio in the Seventh Plan may be around 5 : 1. We must lower it. This is not an impossible task. In the first two plans and again in the Fifth Plan, the ICOR was less than 4 : 1. The possibility of stepping up the rate of growth with minimal outlays of new capital becomes evident when we look at the vast under-utilisation of installed capacity in the economy. The possibility can be clearly seen if we focus on two critical sectors in the infrastructure which are of vital importance to industry and agriculture.

the scope is there

In the power sector, the Plant Load Factor (PLF) of thermal power stations was much too low and what is worse, it has been declining. At the end of the Sixth Plan, the PLF was just about 50 per cent as against over 55 per cent in 1976-77. Another encouraging contrast is provided by the fact that the National Thermal Power Corporation achieved a PLF level of 66 per cent in 1985. So, no one should argue that a higher PLF is unattainable. Every improvement of 1 per cent PLF would be equivalent to adding 500 MWs of new installed capacity costing about Rs. 500 crore. Likewise, transmission and distribution losses in our country are about 21 per cent, while in developed countries they vary between 6 to 12 per cent. A reduction of 1 percentage point in the losses can yield about Rs. 450 crore of extra revenue each year. The potential exists, in other words, for saving thousands of crores of investment in the power sector by making more efficient use of installed capacity which depends primarily on better management, technological improvements and other human inputs, with only a marginal step-up in the outlays on maintenance and repairs.

Then there is the potential for energy conservation which is estimated to be around 20 per cent in transport, 25 per cent in industry and 30 per cent in agriculture. The world over oil intensity of the economy is on the decline, while in India it has been on the increase. Through better technology we can effect huge savings in foreign exchange. Additionally, there is the potential for making greater use of non-conventional sources of energy such as solar, winds, tidal and others. These new vistas can be exploited if we harness our scientific and technological capabilities.

In the irrigation sector, the unutilised irrigation potential created by major and medium projects has increased from 4 million hectares at the beginning of the Sixth Plan to 5.2 million hectares by the end of the Plan. Better coordination between the functionaries responsible for water releases and those incharge of extension and supply of agricultural inputs can help us realise the full potential of command area development programmes. Technological advances such as large scale shifting of water from streams and rivers through pumping and modernisation of irrigation system, coupled with appropriate cropping patterns and infrastructural support, can ensure that we enter the 21st century with an abundance of food supplies.

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The time has come to recognise that we have a vast under-utilised potential for stepping up industrial and

agricultural production not by massive new outlays of capital but primarily through human effort—by motivating workers, improving the management and making full use of our scientific and technological talent. Such a change in approach can only come about if there is a radical re-thinking at all levels. There is a constant country-wide clamour for more investments in new projects; little attention is paid to getting peak performance from existing ones. We must, from now on, have a diffefent approach.

use of technology

Another area in which an attitudinal change is needed is in regard to technology. Time and again in the preceding paragraphs the contribution which technology can make to the transformation of the Indian economy has een emphasised. Jawaharlal Nehru had recognised this potential right at the commencement of planned development when he decided that the country must reach out to the highest strata of science and technology and develop its own capabilities in the field of atomic energy. However, the general thinking on the subject of modern technology seems to be clouded by the identification of technology with labour-saving devices which, it is argued, would only aggravate the already serious problem of unemployment which is growing worse as the population keeps rising. Therefore, there are repeated cries for preserving and reviving the older technologies of yester year which would amount to moving towards the 19th century and not the 21st.

It is of course unthinkable that we should pay the price of rising unemployment in order to modernise the Indian economy and usher the 1st century. In my view, the application of advance technology is not only compatible with but necessary for the creation of more job opportunities with better wages to raise the standard of living of the people. I base this view both on an examination of empirical evidence as well as on a theoretical analysis of the possibilities and trends as I see them.

The density of population in India today is 223 per sq. kilometre. The corresponding figures for a number of other countries are as follows :

U.K.	229
West Germany	250
Belgium	319
Japan	320
Netherlands	351

If all these countries have been able to attain a per capita income level which is many times higher than ours, to sustain high levels of employment and wages and to provide even their unemployed with far better living conditions than middle-income groups have in our country, it is because of the use they have made of science and technology Following the Industrial Revolution in the U.K. there were riots because of the fear—and the fact—of growing unemployment. But through sound economic policies, technology was made to raise not the levels of unemployment but the levels of wages. Today in Japan even robots are welcomed by trade unions. In contrast, countries with low levels of technology suffer from low wages and high unemployment.

Even in our own country we can see how the contrast between prosperous and backward areas hinges around the levels of technology in each. In the agricultural sector, modern technology has made the Green Revolution possible. The areas benefiting from it have become importers of labour, particularly at harvest time. Areas where traditional technology persists suffer from unemployment, open or disguised, from which people migrate to places like Bombay and Calcutta where on account of technological advance, job opportunities are judged to be more plentiful.

and its other side !

At the same time, one must also look at the other side of the coin. In particular industries, the introduction of labour saving devices can certainly lead to unemployment if the market cannot absorb higher production. Even in technologically advanced countries, there have been phases, e.g., in the 1930s and again in recent years when conditions of chronic unemployment prevailed. In order that the introduction of new technologies does not create unemployment, it is necessary to analyse its impact with some care.

"The time has come to recognise that we have a vast under-utilised potential for steppping up industrial and agricultural production not by masive new outlays of capital but primarily through human effort—by motivating workers, improving the management and making full use of our scientific and technological talent".

In essence technology harnesses scientific knowledge for achieving improvements in productivity. To the extent that technology raises the productivity of capital or land, it has no adverse effect on employment. On the contrary, it creates more jobs. When the productivity of labour goes up, employment opportunities would shrink unless the market expends and absorbs the higher production. On the other hand, if the productivity of labour is, say, doubled in any industry and if, simultaneously, production and sales can be doubled, employment would not suffer.

What is essential for this to happen is that there should be adequate demand to absorb the higher pro-

duction. This can come from the workers on account of a wage rise alongwith productivity, or from the middle and upper income groups raising their levels of consumption or investment, or from the State increasing its outlays on development, on welfare as well as on defence and law and order, or from other countries if the product has export possibilities.

The experience of the countries which have been moving forward technologically without an adverse impact on the employment front shows that in different countries in different ways, the level of demand has been raised to keep pace with the rise in per capita productivity. In the Western world, increased outlays on consumption and investment by the upper income groups initially kept raising the demand. Then came the stimulus to it through higher wages. And finally, steps to augment aggregate demand through public works, monetary expansion and other measures—following the lead given by Keynes—became the instrumentalities for pursuing the goal of full employment. Japan and a few other countries relied much more on export demand. In the Soviet Union (as well as China), to begin with, there were severe restraints on mass consumption and it was the State acting as the prime mover of development which provided the demand necessary to make the optimum use of the productive capacity of men and machines. Later, after Stalin in the Soviet Union and after Mao in China, the scope for private consumption was allowed to increase both in depth and in width.

and the crucial point :

The crucial point to remember is that improvements in labour productivity, if accompanied by measures to raise the volume of output and the level of consumption, particularly of the working classes, can lead to exponential growth with full employment. But if the potential for higher production is frustrated because of lack of demand or any other reason, there would be recession and unemployment.

"The general thinking on the subject of modern technology seems to be clouded by the identification of technology with labour-saving devices which, it is argued, would only aggravate the already serious problem of unemployment which is growing worse as the population keeps rising".

One of the ways in which technology makes a major contribution to employment is by introducing—and creating a demand for—wholly new products. Enormous amount of new employment has been generated the world over by technological advance in the electronics industry, which provides new consumer products, expands telecommunications and adds sophistication to management tools as well as to strategic weapons.

In India, because curbs on consumption were seen to be necessary to generate savings, the general trend has been to discourage any significant increase in consumption. Whenever and wherever there was a possibility of production outstripping consumption, instead of measures to push up consumption, restraints were imposed on production—on creation of new capacity, on making full use of installed capacity, on diversification of output—in order to achieve a balance not at the highest possible level but well below it. To guard against unemployment, reliance was placed on measures to ensure that there is no lay-off of redundant labour, no closing down of inefficient enterprises, through subsidisation, one way or another, from the exchequer or the community as a whole. With our commitment to austerity, which is looked upon not as a necessity but as a virtue, there are many who frown upon a wide range of new goods and services, such as synthetic materials for the textile industry and television, as an indulgence in consumerism. In the event, the improvement in the standard of living of most sections of society—other than the affluent classes—has been less than commensurate with the potential that has been built up with so much effort and at such tremendous cost over the years of planned development.

"The crucial point to remember is that improvements in labour productivity, if accompanied by measures to raise the volume of output and the level of consumption, particularly of the working classes, can lead to exponential growth with full employment".

The new development philosophy must have a different outlook and orientation. We must recognise the importance of raising the living standards of the people which can come about by the increased availability of all that they want (not what someone else thinks that they should want) and their having the incomes to buy them.

Let me conclude by saying that development is not a linear process. It has to make exponential leaps. We cannot plan for the future on the assumption that because we are poor we shall remain poor. Jagdish Bhagwati has referred to the case of Natsume Soseki, the great Japanese novelist who, almost exactly a hundred years ago, was advised not to study architecture because in a poor country like Japan, there would never arise the opportunity of building great monuments like St. Pauls! We cannot approach the 21st Century in such a defeatist spirit. When India celebrates its first Independence Day in the 21st Century, it should be as a modern developed economy and not as a developing country in need of external assistance. ☐

Would we march into 2001 with poverty galore!

Dr. Bhabatosh Datta

"By 2001 A.D. we will find two Indias—one India of the very rich, enjoying all the benefits of the rich world outside, and another India which will not only remain poor but also bear the cost of enrichment of those who are already rich", prophesies the author, because he feels, "the dominating economic philosophy at the top now is that of an increasing reliance on the market forces" which, according to him, involves decontrol and delicensing, liberalisation of imports, and contraction of the sphere of public enterprise, privatisation, etc. "all leading to the dominance of economic enterprise by profit-incentives."

THE INDIAN ANALYST of the process and performance of economic planning in the country over the last three decades and a half is not yet quite sure that a new era has started. There is a gushing flow of postulates from the topmost levels—in industry and in government—about a new philosophy of economic (and perhaps social) development, but it seems that the almost puerile enthusiasm that became patent early in 1985 has become moderated to some extent one year later. This may have been due partly to the realisation that the management of a large economy comprising a large and growing population living in poverty and constrained by structural rigidities is not the same thing as the management of a five-star business house operating on the western model. A more important factor is perhaps political as demonstrated by some recent experiences, for a government which is never very far from the next elections has to be cautious about policies which affect adversely the large majority of the population. It has been seen that they can sometimes make an about-turn *en masse.*

plus and minus of planning

To the objective observer of the Indian economic scene, two facts stand out : one that during the last 35 years of planning, our achievements have been great; and, two, over the same period our

failures have also been great. Though apparently contradictory, both are possible in a large and complex economy with a large population living in poverty. On the one side, there had never been before 1951 (when planning started) any consecutive period of 35 years when so much was achieved. One can give page after page of tables proving this, but should rest content with giving just a few examples. Steel production in 1950-51 was 980,000 tonnes and in 1984-85 the output of finished steel was 7.78 million tonnes. Over the same period, the production of cement increased from 2.69 million tonnes to 29.5 million tonnes and aluminium output rose from just 3,700 tonnes to 276,000 tonnes. A whole group of industries (like mechanical engineering, electrical engineering or chemicals) grew up to appreciable dimensions from practically a zero-base. There has been nearly a twenty-fold increase in electricity generation and the three-fold increase in foodgrains production, obviously small, has at least taken the country to a position in which, with a full-scale system of distribution, there should be enough food for all, even though the population has increased more than two-fold from 361 million in 1951 to more than 750 million in 1986.

"The really important point is what should be done now and in the immediate future to steer our economy to the uncontested objectives of growth with economic and social justice and of growth with stability".

This is one side of the picture. On the other side, there are the crude facts the most important of which is that even with the large increases in production, we have failed to reach the targets that were set up. There are two ways of evaluating our growth performance—first, comparing the present with the past, which gives us a rosy picture, and secondly, comparing the actual present with what was aimed at, or, at least, what should have been feasible. The major indicator of our failure, as depicted by this comparison, is the growth of our gross domestic product at an average rate of 3.5 per cent per year, while the target has always been around 5 per cent. The shortfall becomes more clearly patent when one notes that compounded at an annual rate of 5 per cent, our GNP would have been Rs. 96,430 crore, (at 1970-71 prices) in 1984-85, instead of only Rs. 61,201 crore and the per capita income Rs. 1286 instead of Rs. 772. The constant-price per capita income of Rs. 1286 would have meant a current price per capita income of Rs. 3870 in 1984-85.

the poverty line enigma

It is now claimed that the percentage of population below the poverty line has fallen between 1978-79 and 1984-85 from 48 to about 38. Some field studies have shown that the statistical improvement has been mainly achieved by pulling up the richest among the poor (i.e., those just below the poverty line) to above the line and that the "benefits" of the poverty alleviation programmes have been very inadequately estimated. The outlay on poverty alleviation should produce at least one, if not more, of the following results : creation of durable productive assets, creation of a durable output and income streams, creation of full standard man-year employment for large numbers, and increasing the consumption of essential goods among the really indigent. It is reported that the Planning Commission has evolved a fourfold classification of the poor, with households with annual incomes between Rs. 5001 and Rs. 6400 at the top and those with incomes below Rs. 2266 per year at the bottom. It is the bottom rung that matters first. And there is also the fact that even with a reduction of the percentage below the poverty line to 38, the total number of the people concerned stands now at about 285 million. The unemployment data have been made utterly confusing by moving from one definition to another. The only obvious fact is the 27 million names on the live registers of the employment exchanges, but here, while the list may include some who are in fact employed and are seeking better positions, there is a large rural area which is not covered by the exchanges.

pressures over policies

One fails to realise the basic problems of the Indian economy unless one puts economic justice first and seeks to create extensive and permanent employment and incomes at the lowest levels. The failure of agriculture to grow at an annual rate of more than 4 per cent or of industry to grow at an annual rate of more than 8 per cent attracts attention easily, but poverty, under-feeding or malnutrition appear to most as invisible and accepted facts of life, to be mentioned in speeches and documents here or there, but to be forgotten when major policy-decisions are made. These decisions are made under pressure—from top industrialists and export houses and from rich farmers—and sometimes it appears clearly that these pressure groups, the political leaders of the government and the officials responsible for implementing the policy decisions think on the same line.

"India requires basically a one-point programme, a programme of removing poverty. All programmes of growth have to pass the acid test of the extent to which they subserve the realisation of that one objective."

It is undeniable that all this should change—irrespective of the fact that there is no magic in fifteen more revolutions of the earth that will take India (and every country in the world) to the 21st century, which is only one of the ways of counting the years in terms of complete hundreds. All that one can forecast now is that in fifteen years the population will grow to 1000 million and the wholesale price index (with the present base-year) will be at least 750. The really important point is what should be done now and in the immediate future to steer our economy to the uncontested objectives of growth with economic and social justice and of growth with stability. It is not always remembered that our Constitution places "justice" as our first objective and that within that concept, the first place is given to *economic* justice. Those who proclaim loudly about "20 points" forget that India requires basically a one-point programme, a programme of removing poverty. All programmes of growth have to pass the acid test of the extent to which they subserve the realisation of that one objective.

is all this growth?

It should be possible to expect that there will be general agreement on this. But there have been developing sharp differences of opinion (and therefore of approach) regarding the paths to be followed. One can immediately dismiss such platitudes as that there must be growth first in order to achieve justice. It is not noted that what is known statistically as growth does not concern itself with the *contents* of growth An increase in the production of high-priced luxury goods is growth. The construction of highly expensive high-rise apartment houses is growth. A proliferation of ministries and departments under the

"The dominating economic philosophy at the top now —deriving itself from the undeniable shortcomings of our planning—is that of an increasing reliance on the market forces. This involves decontrol and delicensing liberalisation of imports, contraction of the sphere of public enterprise, privatisation wherever possible, freer entry of foreign capital and technology, lower taxes."

government is growth. The increase in defence outlay is growth And there is growth when the foodgrains output or the output of cheap cloth increases, when housing is provided to the poor, or when drinking water is made available to the innumerable villages that suffer not only from hunger but also from thirst. There can thus be growth and growth and the choice should be clear.

market forces that work

The dominating economic philosophy at the top now—deriving itself from the undeniable shortcomings of our planning—is that of an increasing reliance on the market forces. This involves de-control and delicensing, liberalisation of imports, contraction of the sphere of public enterprise, privatisation wherever possible, freer entry of foreign capital and technology, lower taxes—all leading to the dominance of economic enterprise by profit-incentives. Those who feel a little guilty in recommending all this argue that the benefits of profit-induced growth will filter down to the poor, though nobody cares to answer

"The policy of liberalisation of imports has up till now created no visible benefit to the society at large, but has helped in creating a critical balance of payments situation."

the question how many centuries will that process take.

There are two ways of looking at this philosophy —one factual and the other analytical. The trend towards liberalisation has actually been operating for the last six years, but there is as yet no perceptible effect on production. Industry has been getting concessions after concessions, but still the general index of industrial production has not risen at the rate expected and the benefits of the concessions have not been passed on to the consumers. The policy of liberalisation of imports has up till now created no visible benefit to the society at large, but has helped in creating a critical balance of payments situation.

development sans social philosophy

The analyst of the Indian economic scene can easily point out that the market forces that the industrialists and their supporters in the Government want are not the perfectly competitive forces of the text books, which, in any case, do not exist in real life, but the market forces in which the strong will compete with the weak and in which monopolistic and semi-monopolistic pressures will replace government control. One can build up a theory of competitive equilibrium on the basis of certain extremely unrealistic assumptions about factor-divisibilities and substitution, transformation of factors into outputs and the possibilities arising from the choice among outputs But apart from the rigours of the assumptions, there is the fact that such an equilibrium is not necessarily a distributive equilibrium of the type that is socially acceptable If one wants a theory of economic growth with justice, one has not only to come out of the rut of heuristic text-book models, which are excellent for explicatory purposes, but has to go beyond all that and even beyond economics. An economic philosophy can only be a handmaiden

of a social philosophy. But no social philosophy is evident in the "new philosophy of development".

One can visualise what will be the results of the adoption in an increasingly fuller measure of the so-called new philosophy. Economists speak of a "dual economy" in countries like India, but that means simply the acceptance of an initial fact. The new philosophy will firmly entrench the dual economy into our system. By 2001 A.D. we will find two Indias—one India of the very rich, enjoying all the benefits of the rich world outside and another India which will not only remain poor, but also bear the cost of the enrichment of those who are already rich. In its tax policy, the Government offers large reliefs to the housewives in the rich families—reliefs large enough to overcompensate the higher prices of petrol or kerosene or gas cylinders. The wives of the poor, as in duty bound, shall ever pay. This only illustrates how the costs of development are distributed.

"By 2001 A.D. we will find two Indias—one India of the very rich, enjoying all the benefits of the rich world outside and another India which will not only remain poor, but also bear the cost of the enrichment of those who are already rich."

and its repercussions

Under this scheme, the gross domestic product will presumably increase at more than 5 per cent per year, but the product will consist of goods and services consumed by the top 10 per cent. If industrial output increases that will only mean the top 10 per cent producing for the same 10 per cent. The liberal import of high technology will prevent the employment level from rising at a desirably fast rate. There will be no black money, for as taxes are reduced and controls removed, all profits will be lawfully white. The economy will be controlled by industrialists and their foreign foster-parents and by the rich landlords, with politicians as their puppets and civil servants as their obliging tools. The government will procure foodgrains at high prices to make the agricultural lobby happy, but will not find it possible to release the stocks to the hungry.

Examples are given from not only the developed countries—which are now guided by "supply-side economists" but also from South Korea and Taiwan, from Hong Kong and Singapore. It is forgotten that India is not a small country with practically no defence budget and that India is not a city-state either. It is forgotten that the extent of state-control and direction in South Korea or Taiwan (and in Japan also) is much more substantial than is generally believed. It is not noticed that in Britain or in the U.S.A., substantial unemployment benefits have kept distress and discontent both at bay. It is not realised that supply-side economics has come to be seriously questioned in the country of its origin. And there is the important fact that whatever may be the merits of a Chicago monetarist prescribing remedies for his own country, when he offers advice to a country like Chile, he may become an architect of disaster.

this sceptical attitude!

Perhaps the government will realise the weaknesses in the new philosophy long before we reach the turn of the century. As was stated at the beginning, it appears that the Government has already been having doubts about its export-import policy announced in April, 1985 and also about the long-term fiscal policy adopted later in December. The pre-budget increases in the administered prices had to be tempered down under strong pressure, internal and external. The new proposals regarding small-scale industries had to be modified. Reduction in excise by Rs. 79 crore and of import duties by Rs. 2.1 crore were announced during the budget debate. This will increase the 'final deficit' beyond Rs. 3650 crore and some state governments will be affected. It is a good sign that the government takes a flexible attitude on certain matters, but it would have been better if the necessary home-work had been done before presenting the budget.

If thus the new philosophy—which is not a 'new' thing at all, but a thoughtless imitation of what some other countries have done and of what the business schools teach—is bound to result in further dividing the two Indias, the next question is, 'what are then the alternatives'?

then the alternatives?

One alternative will be to continue in the manner in which we have worked in the past. Enough has been said in the earlier pages that this will not raise the national income at the desired rate and will not alleviate poverty in an appreciable measure. One can suggest that we may continue with our accepted process with some modifications. That is what the new Seventh Five Year Plan has sought to do but its protestations about the changes that are necessary are not reflected either in the size of the Plan or in the detailed allocations. One senses a feeling of discomfort in what the Planning Commission has written in the introductory chapters, appearing as if

"The public sector has to stay and prosper, but it has to be run without any political pressure, nepotism and corruption. The important requisite is to reduce the costs through more efficient operation under the autonomous control of persons who know their work."

the Commission does not fully believe in what it is saying. If one places the Sixth Plan and the Seventh Plan allocations side by side, one would not find much difference. And one is surprised that with the declared emphasis on "food, work and productivity", the rates of growth projected are those with which we have been familiar for a long time—4 per cent per annum in agriculture, 8 per cent in industry and 5 per cent in the aggregate. But if even with these standardised rates of growth, effective action is taken for the lowest groups in the poverty-scale, there may be something to hope for. But hopes are not raised by the allocations and hopes are likely to be crushed when it is found that the high expectations regarding the public sector savings are not realised. That will endanger the whole plan and also create inflationary pressures. If experience is any guide, the axe of retrenchment will fall first on the social services and on the poverty alleviation programmes.

de-planning !

If then 'de-planning' (sometimes known by the polite name of 'indicative planning') will lead to greater disparities and if planning of the sort we have been accustomed to will literally fail to deliver the goods, is there a third way? One can perhaps say that there must be a third way, which would make our planning really meaningful. This would involve a change in attitude and a firmness in determination, but will not mean anything that cannot be immediately initiated. "Indicative planning" will be an utter failure in India. Where industrialists and traders evolve every possible method to evade perfectly legal governmental orders, they will not have any regard for "indications". We have seen quite a number of "gentlemen's agreements" melt away in a very ungentlemanly manner. Privatisation of the type that Margaret Thatcher has been practising will fail because the units which the government will seek to sell will not be the units private capital will want to buy. And there are political dangers in privatisation of that type. In fact, there is a commonly observed demand in India for the government to take over every unit that has become sick or is handicapped by some legal tangle or other.

public sector, essential

The public sector has, therefore, to stay and prosper, but it has to be run without any political pressure, nepotism and corruption. The easy way often taken for increasing the public sector surpluses is to raise the prices. But this generally backfires on other public sector units and the cascading effect nullifies the expected surplus. The important requisite is to reduce the costs through more efficient operation under the autonomous control of persons who know their work. In the private sector, much more emphasis has to be given to small and medium-sized industries, particularly those located in the rural areas and to agriculture. And agricultural improvement will remain confined to a few areas only unless comprehensive land reform measures become a time-bound part of our plans. If government procurement creates a large stock of foodgrains, this stock must directly be used for generating employment. There has to be along with this a uniform country-wide public distribution system. A clear policy has to be taken about the balance of payments, instead of tucking the subject up at the end of the plan documents.

The right plan should start from poverty, prices and the balance of payments and not regard them as ancillary problems about which there is only a Micawberish hope that something will turn up. If along with all that a determined policy is adopted regarding the fiscal position—involving taxes, expenditure and government deficits—and specific steps are taken to put taxes on the shoulders able to bear them (instead of assuring them of fixed rates) and to reduce all non-essential expenditure under every head, there need not be any financial crunch. The economy should be able to sustain the desired rate of growth and to attain better justice at the same time. The substitute for inefficient planning is efficient planning, with the social targets held clearly and continuously in view. □

"..agricultural improvement will remain confined to a few areas only unless comprehensive land reform measures become a time-bound part of our plans. If Government procurement creates a large stock of foodgrains, this stock must directly be used for generating employment."

The tryst and the choice between this and that

Dr. Malcolm S. Adiseshiah

The country and its power elites now face a clear-cut choice which, says the author, no language can blur. And, that is "between a society which continues along the present basic structure, resulting in increased production, larger capital accumulation, and improvement in the condition of the poor majority on the one hand, and a Society which takes economic inequality, amounting to social inequity, head on, and makes the hard but necessary current decisions to move towards a less inegalitarian social order in accordance with the constitutional provisions of equality of all citizens of the country, on the other".

WHAT WOULD THE INDIAN ECONOMY LOOK LIKE on August 15, 2001? There are two possible scenarios that can be constructed in answer to this question, one of which is implied in the guidelines sent out to those participating in this exercise.

The first scenario is what the guidelines call the "logical outcome (in 2001 AD) of our actions today", which is repeated in the request "to give a close look at the development philosophy at work and outline its logical ends". This is the methodology of projection into future (in this case 2001 AD) of the existing objectives and means followed to attain them. If we start today in 1986 with the kind of society X and attain 100, then at this rate and with these means in one and half decade we can|will attain 115 with the society X+. This projection scenario which is the logical outcome scenario also includes what the guidelines call "better strategy (which is) more likely to hit the target". That is the target is still 115, and improved policies and implementation may be needed to be sure of attaining it.

The second scenario is to fix the desirable objectives for the future, the year 2001 AD, and in light of those objectives to establish now the means of attaining these objectives. Here we may, for example set for ourselves the kind of society or social relations represented by Y and 112 as its production outcome, and the scenario will now establish the means of changing existing social relations represented by X to the kind of social relations desired in 2001 AD represented by Y, involving also moving production from the current less than 100 to 112. This is the methodology followed in futurological exercises where the future objectives are set on the basis of a set of socially desirable norms, and decisions are currently indicated and made in order to move towards and attain those objectives.

the logical outcome scenario

The first scenario of what the economy will look like in 2001 AD starts with existing social relations —where the country's means of production are either owned by the state (state capitalism) to some extent, or by private persons (as in capitalist agriculture and manufacturing industry for the most part), so that those owning these assets—whether the state or private persons—earn an income from such property ownership (in rent, interest, profits as well as salaries and wages), while the assetless majority are employed by the owners for part of the year, with special employment programmes being devised to employ similarly for part time those who are looking for but unable to get gainful employment, for a wage which has to struggle to keep up with the rate of inflation in the community. The motor force of this economy is saving, the accumulation of capital, which is some 20 per cent by the state and its assets ownership and production apparatus, and 80 per cent by the private sector, which is either the well-to-do households or corporate enterprises. The capital accumulation is invested in production, and the major concentration is to keep increasing capital resources (as against improving human resources) as the main engine of production and growth of incomes, profits and interest.

This saving and production economy existing today will by 2001 AD attain certain levels of production and distribution which are set forth in Chapter Two of the Seventh Plan document. At the turn of the century, under this scenario, the economy will emerge as "a modern technologically progressive economy with expanding capacity to provide the basic material and cultural requisites of well being for all people." Population, rather than social relations, is seen as the major development constraint and imperative and hence the need to curb population growth becomes primordial using various means and incentives so that the total population is 972 million (instead of 1050 million) by 2001 AD. On this basis, production is to increase annually at 5 per cent during the decade and half before 2001; agriculture whose share will decline from 37 per cent to 25 per cent of the national incomes is set to grow at an annual 2.5 per cent (with foodgrain production at 240 million tonnes in 2001 AD); and mining and manufacturing growing at 6.8 per cent. This will require some 26 per cent of GDP being invested in agriculture, industry and the services in 2001, of which 95.5 per cent will be from savings from within the country.

Agriculture, in order to increase its production by 80 per cent will be more science-based and industry-linked, the newly emerging areas being bio-technology, genetic engineering, photo synthesis, tissue culture, bio-insecticides and pheromone to enable self sufficiency in food and fibres, maximise employment and also to conserve the biosphere. Industry will be readjusted, re-equipped and retooled for accelerating growth, will upgrade in technology and management, will be opened to international competition, and enter the field of sunrise industries, making the manufacturing scene in 2001 qualitatively different from that in 1985.

The energy sector will be managed to economise on commercial and expand non-commercial enegry, involving an energy transition in rural areas. Against this production and savings background, the distribution apparatus in 2001 will ensure that per capita consumption which is Rs. 1979 rise to Rs. 3124, with foodgrains consumption increasing from 178 kg. to 215 kg. cloth from 16.16 metres to 23.36 metres, employment from 187 million to 387 million standard person years, life expectancy from 56 years to 63 years, adult literacy near complete, elementary education universal, and the percentage of the people living below the poverty line reduced from today's 37 per cent to 5 per cent by the year 2001, using standards established in the early sixties.

the alternative scenario

The other perspective for 2001 begins with fixing the objective as the establishing of social relations where the gap between the top 30 per cent of society who earns the major part of their income by owning assets and the bottom 70 per cent whose major income is wages or salaries, is reduced and continues in that direction so that by 2015 the differences in living from ownership of assets is lower than the differences between the various deciles in earned incomes. This kind of society with moving towards socio-economic equity as its major objective by 2001 requires that decisions and actions must be taken now...(a) to review and restructure the land ceiling legislation so that by 2001 ownership of all land is vested in the state which will distribute it so that no family has more than 5 hectares of irrigated land or 10 hectares of rainfed land to cultivate and earn its income therefrom, (with science-based agriculture the sug-

gested size of family holdings will be optimally productive); (b) to make available the surplus land to the landless using the above norms, and some assets in the form of cattle, machines, or other durables to other each assetless family (which is the intention behind the poorly and badly managed Integrated Rural Development Programme); (c) to establish and operate urban land ceiling and ceiling on housing and property; (d) to expand the public sector so that all enterprises above a certain capital base, say Rs. 50 crores, are owned and operated by the public sector and (e) to operate a system of direct taxes--personal income tax, corporate income tax, wealth tax, estate duty and inheritance tax, gift tax, capital gains tax, and expenditure tax so that there is a transfer of resources from the top 2 deciles to the remaining 7 deciles continuously.

The production and distribution system under this scenario will be similar to that of the first one except that :

(a) the savings instead of coming to the extent of 80 per cent from the household sector and private sector will to that extent come from the state and the public sector;

(b) population growth will be adjusted to the rising standard of living of the bottom seven deciles of the population and will become a major development resource instead of the development constraint it is in the first scenario;

(c) the distributive facets—per capita consumption of foodgrains, cloth, housing, etc. for the bottom 7 deciles will be at about 50 per cent higher levels in quantum terms compared to the first scenario;

(d) health care including the goal of Health for All, universalising of basic education and the wide use of nonformal education as a life-long continuing education process employing all self instructional materials like books, video technology and computer will move forward much more rapidly in the decade and half that separates the present from the year 2001 ;

(e) employment will be 10 per cent more than that set forth in the first scenario, with self employment being the major employment form, and gainful employment for the others through the recasting of the fair wages legislation and its strict enforcement; and

(f) poverty at a 50 per cent higher norm will cease to exist well before the 2001 deadline.

the option

For the first scenario to be realised as we enter the 21st century there is just the simple need to close the gap beween profession and practice, between targets and achievement, between law and its execution. This requires not a new strategy but a clear and firm political will and a decisive administrative framework which will execute the programme for the next 3 plans as set forth in the first scenario.

The second perspective does call for a turn around in the societal relations that exists today in assets ownership and obtaining unearned incomes from such ownership in agriculture, in manufacturing industry, in the rural areas and urban agglomerations. It also calls for reversing the growing reliance on indirect taxation which is for the most part, paid by the poor and lower middle class majority, the bottom 7 deciles referred to earlier, and going back on the low levels of direct taxation imposed on the well-to-do individuals and private enterprises, with large agricultural incomes being completely exempted from direct taxation, and what is even more regrettable the pledge given in the Long Term Fiscal Policy to continue this low level of direct taxation for the balance of the Seventh Plan. If this fiscal policy is followed then the second scenario is out of the question. Instead in the first scenario, the distribution objectives —5 per cent poverty ratio, little unemployment—will be attained but at the cost of widening socio-economic inequalities.

So there is a clear choice which the 2001 August 15, the year and date of our renewed destiny, poses. The choice to be made is between a society which continues along the present basic structure, resulting in increased production, larger capital accumulation, and improvement in the condition of the poor majority on the one hand, and a society which takes economic inequality, amounting to social inequity, head on, and makes the hard but necessary current decisions to move towards a less inegalitarian social order in accordance with the constitutional provisions of equality of all citizens of the country, on the other. There is a clear cut choice facing the country and its power elites, which no language can blur, and which calls for a national and individaul political decision. □

Doing the business in a businesslike way !

Mohit Sen

The way we seem to be set today on changing the rural scene belies the hopes on 2001, says the author, and adds, how could this happen in almost total absence of radical structural reforms, so necessary to break shackles of rural poverty. To do the business, he pleads for honouring the commitment—land to tiller—and building up of cooperativised village, a harbinger of "Hindustan Hamara of 2001 and beyond".

LET US HOPE and, of course let us so work and struggle that both the world and India would reach 2001 AD ! The reckless play at neoglobalism by the present US Administration makes it likely that nuclear weapons would have blasted all of us off the face of the earth. Every now and again steps are taken which make the nuclear death of human civilisation a real possibility. There is nothing more important today than to do all we can to assert the most fundamental of all human rights—the right to life.

The supercilious and the super-revolutionaries imagine and proclaim that these problems of "high" politics are quite beyond the realm of consciousness of the vast millions who barely manage to subsist in our myriad villages. The downtrodden, they imagine, have only bellies and genitals and that all they are concerned about is bread and sex. This is only true to the extent that only with material deprivation they have also been denied information and knowledge. But to the extent that they are informed and know they react with the wisdom of their toil and their suffering. And, in many parts of our country they now know, deep in the villages as well, that their very survival is at stake. And, unlike what the supercilious and the super-revolutionaries might imagine, they want to live and they want their children and grandchildren to live. Life is needed for life to be better.

So the villagers, like the rest of us, have as their first thought about the 21st century that they or their progeny should reach it. What many of them, like many of us, do not know is what to do about the impending catastrophe.

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However, we shall have to assume for the purposes of our subsequent discussion some thing that we have no right to assume, i.e., that we and our villages have got to the beckoning shores of the next millennium.

the way life goes !

For that discussion we have to take a look at where we are and what our villages contain. We have reached the critical mid-passage of our journey to becoming an independent, great power. And our democratic processes have reached a similar mid-passage to becoming based on the power of our masses. So has our nation reached the point where its unity is halfway to invulnerability.

It is because of this that we are now under such siege and attack. It is because of this that such a fierce destabilisation offensive is under way. But the attack, siege and destabilisation are able to take on the shape and quantum of menace that they have is because of the immense undones, badly dones and wrongly dones of our developmental process. Poverty, inequality and persistence of archaic structures with all the attendant consequences in the realm of consciousness have combined to produce a situation where we and our country can be overwhelmed.

Nowhere are the vulnerabilities of our position and very national existence more present than in our villages. There can be no doubt that they have remained the exploited hinterland of our development. Not that there has been no development in our villages. Not that there are no sections which have prospered. Gains have been made by rural India and rural men of power and property have gained might as much as their urban counterparts. At the same time our villages are relatively less well-placed or have remained relatively less well-placed vis-a-vis our urban conglomerates.

"The attack, siege and destabilisation are able to take on the shape and quantum of menace that they have is because of the immense undones, badly dones and wrongly dones of our developmental process."

The reason for this is not that rural development has been neglected or that there has been an urban bias or industrial tilt in our planning. The terms of trade between industry and agriculture have not always gone against the latter and industrial development has been crucial for the breakthrough of the "green revolution". The chief reason for the lag of the rural areas is the failure of land reforms.

The demagogy of Shri Sharad Joshi and some others that India (the towns) has been exploiting Bharat (the villages) is meant to gloss over the fact of rural exploitation. What has happened in rural India is that while overt feudal exploitation has been either abolished or mitigated, semifeudal exploitation has remained and been reinforced, in large areas of our country, by the most reactionary type of capitalist development. In addition, the traditional archaic structures have not been transformed into capitalist structures though they have been linked up to the market. The village has not been so much exploited by the town as within itself. The absence of radical structural reforms has meant the continued shackling of the rural working man and woman, which is the main productive force of the village, to an even greater extent than in the towns.

"Poverty, inequality and persistence of archaic structures with all the attendant consequences in the realm of consciousness have combined to produce a situation where we and our country can be overwhelmed"

Consequent on this is the stark fact that in the rural areas there is hardly any public sector worth the name. By public sector in the present context is meant not only state owned institutions but also co-operatives. Without the innovative and countervailing force of the broad spectrum public sector there is no possibility of a soundly based production breakthrough, not to speak of the realisation of even limited social equity. The operation of spontaneous forces or structure-transforming work by the private enterprise are both far too weak to be of practical significance in this respect.

In Bihar the massacre of the landless harijan labourers is a grim reminder of the persistence of feudal barbarism. But what about the assault on the same group in the delta districts of Andhra Pradesh and in Tanjore in Tamil Nadu ? These are areas of what can be termed agrarian capitalism. What about the Jat domination of the villages in Punjab, Haryana and West Uttar Pradesh ? Capitalist exploitation is facilitated by and takes over the feudal institution of caste in vast stretches of rural India and about this the Sharad Joshis have nothing to say. The reason is that they cannot be the doctors when they themselves are the disease.

Against this background when one tries to visualise the rural India in the 21st centrury one has to operate at two different levels, of what is desirable and what is likely.

the way we need going!

At the level of the desirable, rural India in the next millennium should come closer to Gandhiji's ideal of *Gram Swaraj* but on the basis of modern technology. Indeed, that would or should be the real challenge, i.e., of modernisation which is not elitist but of mass dimensions. This would mean the development of the cooperative movement more and more on the plane of production. It would mean the implementation of the celebrated 1959 Nagpur Resolution of the Indian National Congress on rural cooperatives which was sponsored by Pandit Nehru and sabotaged by the Charan Singhs of his own party.

"What has happened in rural India is that while overt feudal exploitation has been either abolished or mitigated, semi-feudal exploitation has remained and been reinforced, in large areas of our country, by the most reactionary type of capitalist development."

Rural India needs almost everything simply because the vast majority of its inhabitants have so very little, in sharp contrast not only to the middle and rich urban strata but also the affluent in the villages themselves. Housing, drinking water, elementary health services, education and all that is needed for the human services is absent for most of our rural people.

But the greatest need of the needy is precisely what seems to be most abundant—land. The concentration of ownership of land is still very high, even though a substantial intermediate stratum has remained in existence or even been strengthened. The percentage of the landless and the landpoor would be well over half the rural population. Disguised as well as semi-employement remains a scourge for these sections of our people. Pauperisation rather than proletariatianisation is their miserable lot. The same is true of the traditional village craftsmen.

It will be remembered that Gandhiji stood for the total abolition of private ownership of land. This aspect of his trusteeship concept is all too often forgotten. It was he who often quoted the *sloka "Subhi bhoomi Gopal ki"*. He used to always add that if, indeed, all land belonged to Gopal then it meant, in fact, that it belonged to nobody and to all. This concept is also at the heart of the cooperative movement It is also at the heart of the slogan "land to the tiller !" which was such a resounding battlecry of the freedom struggle.

Both these taken together, with land reforms leading to and being crowned by the establishment of the cooperatives of the working peasantry, are the most fundamental features of the desired village in India in the 21st century.

land to the landless and coops

Following radical land reforms on the basis of the recommendations of the J. C. Kumarappa Committee of the early 1950s of what was implemented by the Congress-CPI coalition government in Kerala in the 1970s under the Chief Ministership of Sri C. Achutha Menon, what has to be done immediately thereafter is to form cooperatives of the beneficiaries.

Along with this cooperative marketting, sale and processing of rural production has to be pushed ahead. Here we have the valuable example of the Amul pattern where the buyer is also the producer through the cooperatives. This can apply to foodgrains as well with the cooperatives forming the base of operations of the Food Corporation of India. The problem of credit can be tackled in a similar fashion.

This image of what the 21st century Indian village should be like can cause cynicism since we have seen the fate of the cooperative movement in large parts of our country. This movement has either betrayed itself by becoming "cooperative capitalism" of the Maharashtra variety or degenerating into cesspools of bankruptcy and corruption. But there is also the success story of Amul, the secret of which is democratic functioning and combining mass participation with technological expertise.

Much more basic, however, is the difference that the cooperative movement as envisaged here would be based on the beneficiaries of land reforms. It would be the endproduct of the implementation of radical land reforms and developed on the foundation of equitable ownership of land. It would be the endproduct of the completion of the democratic revolution in our country.

"The absence of radical structural reforms has meant the continued shackling of the rural working man and woman, which is the main productive force of the village to an even greater extent than in the towns."

It should be made clear at this point that the cooperatives envisaged here would, to start with, be based on the retention of private ownership of land and the pooling together of all the land owned by those coming together in the cooperatives. As a concomitant of this fact the remuneration of the cooperators would be mainly based on the work that they had performed but partly also on the basis of the amount of land that they had brought into the pool. An element of rent payment would remain untill such time as the payment for work becomes so large as to

(continued on page 35)

As things go, this chasm would only grow !

Dr. Kamal Nayan Kabra

With pointed analysis of the growth pattern during 1947-86, particularly relating to agriculture and rural sectors, the author questions the very basis of our hopes on 2001. The present policy and planning stances, he asserts, are not even directionally poised towards giving those deprived for centuries an opportunity to take a quantum jump into the 21st century, both chronologically and figuratively.

IT IS GENERALLY AGREED that the present cannot be understood except as an integral extension of the past. From this follows that the future arises out of the present. It does not mean that human beings, society, their dreams and ambitions play no part in shaping the future. Nor does it mean that the future will be a linear extension of the shape of the things as they obtain in the present, except for the growth in size. In fact, at a certain stage quantitative change by itself becomes a qualitative departure. The very fact that various components of society engage themselves in crystal gazing in order to envision the future becomes an element in determining the future pattern of society. Futurology is, therefore, no game of idle curiosity. It forms a part of the desire of the human beings, on the one hand, to reduce the uncertainties which inevitably mark the days to come and, on the other, to determine the nature, form and size of the interventions required with a view to taking social change in a preferred direction

If one goes with the above, it may be maintained that the trend in future studies to extrapolate the presently observed trends in order to paint a picture of the future are simplistic, and, may turn out to be misleading. As a corrective to this, often a number of alternative future scenarios are generated on the basis of a number of alternative growth paths and growth rates of the key variables. The 'scientific' content of the exercises may at times be strengthened by ensuring that the extrapolation exercises give results for various variables which are feasible and mutually consistent for various inter-related variables.

an explanation

The reason I mention these things is that an attempt to extend one's mental eye in order to capture some salient and striking features of India in 2001 A.D. cannot hopefully be a rewarding exercise if the simplistic menthodology described above is adopted. Mere quantitative exercises at building up alternative scenarios may largely be a statisticians' and econometricians' delight, if they do not consciously incorporate one's judgement about the nature of social

"The relative size of agriculture and allied activities in terms of their contribution to GDP has come down to around 30-35 per cent, while it continues to 'engage' about 70 per cent of the main workers."

dynamics which may make the variables inter-relate in a sharply different manner from the ones observed so far and may unleash new forces which introduce different alignments of forces, these exercises can provide little guidance for planning the future, as they cannot anticipate new difficulties and hurdles. Thus they are a little help in guiding efforts for making the future more desirable.

True, one's values and social sympathies play an inevitable part in those attempts. But a social scientist posturing to shun values would be a prisoner of pseudo-scientism. Hence, in the following an attempt is made to extrapolate the operation of the socio-economic forces on the morrow of the 21st century, particularly with respect to agricultural and rural India. This is based on an understanding that the socio-economic forces in Inlia are not exclusively set into motion and follow the course dictated by their own inner, autonomous logic. Both the international factors and the political processes (both state based and outside the state political configurations) play their part. We would, to a limited extent, take into account both the autonomous factors and the induced factors in their interaction. Our assumptions on these processes and their linkages would become apparent by our formulations and extrapolations.

whither rural economy!

What have been the main changes in the Indian economic system during the period 1947—86, particularly those related to agriculture and rural sectors? A brief look at these changes may provide one with a certain basis for anticipating further changes in these matters. On this basis one may attempt to draw a picture of India which is likely to emerge after over half a century of Independence.

Very briefly one can say that a great deal of social, economic, technical, political and cultural change has taken place in rural India since the attainment of Independence. Since India now no longer remains the agricultural backyard of the imperialist powers, the agricultural economy of India is no longer organised in order to subserve the interests of the external forces. This is not to say that our agriculture is not related to the world economy. In fact, through agricultural inputs, technology, imports and exports, Indian agriculture maintains fairly strong linkages with the international economy. How these linkages affect the growth of agriculture and agrarian relations is largely dependent, apart from the nature of linkages, on the nature and development themselves of productive forces in our agriculture, agrarian relations and the place of agriculture in the Indian economy.

The relative size of agriculture and allied activities in terms of their contribution to GDP has come down to around 30-35 per cent, while it continues to 'engage' about 70 per cent of the main workers. This 'structural retrogression' of the economy implies, among other things, that average income in the agricultural sector has declined in comparison to average incomes in the other sectors, which already had per capita incomes higher than that in agriculture. Given the big increase in the absolute number of people dependent on agriculture, per capita availability of cultivable land has also worsened.

It means that the undoubtedly significant technical change and productivity improvements in our agriculture leading to larger total output and higher per acre productivity have not been able to fully reverse the impact of over-crowding of agriculture. Its relative rate of growth has also been slower. In any case, the proportion of rural population has come down. Illiteracy and death rate levels have also come down, though by themselves, they (particularly illiteracy among women and mortality among children) remain disconcertingly high. Goaded by a combination of 'push' and 'pull' factors, the rural

"The concentration of the growth process in the hands of the big, 'progressive' farmer bred interclass inequalities. Marketed output of foodgrains became concentrated in the hands of a small section of agriculturists."

population continues to flock into the cities. Lacking skills, investible funds and regular employment opportunities, the immigrant ruralites swell the slums, informal activities and unorganised sector in the urban areas. They are often getting recruited as lumpens.

the production pattern

The changes in agricultural production, concentrated mainly in wheat and rice in certain states and districts particularly those with better irrigation

facilities and in the hands of better off farmers have eliminated the need for the regular imperative of food imports. The food imports until the 1970s used to be a compulsion and on such a large scale as to force resort to soliciting concessional terms, injurious to both national self-esteem and economic interests. While agricultural growth of almost 3 per cent per annum over this period kept ahead of the growth of population during the period, the crop and regional imbalances (pulses, oilseeds and coarse grains suffered a relative decline and in a large number of districts growth of food production could not keep pace with population growth, particularly in rainfed areas and in the East and the South) which characterised our agricultural growth created many growth led inequities.

The concentration of the growth process in the hands of the big, 'progressive' farmers bred inter-class inequalities. Marketed output of foodgrains become concentrated in the hands of a small section of agriculturists.

Afterall, about 90 per cent of procurement is centred in Punjab, Haryana, Western U.P. and coastal Andhra Pradesh. The technical 'progress' which yielded additional food production also led to rising average cost of production. This fact along with incentive price policy of the State made food very costly, while the modest rate of growth and relatively low rate of labour absorption in agriculture limited the availability of purchasing power in the hands of the landless workers, the small and marginal farmers and the rural artisans. Thus, despite larger domestic availability of food, chronic malnutrition and hunger (as distinct from starvation) continues in rural India. Per capita consumption in 1982-83 was at current prices Rs. 4.27. Given great inequalities, it would mean that a vast majority does not have effective employment, i.e., work opportunities which are either productive or rewarding enough to give even a minimum essential level of consumption. Even when the expenditure level is about 30 per cent higher than the average in the better-off states like Punjab, it falls far short of a minimum. It follows that effective employment still eludes a great majority, particularly in the rural India.

"Given great inequalities, it would mean that a vast majority does not have effective employment, i.e. work opportunities which are either productive or rewarding enough to give even a minium essential level of consumption."

negligible employment

It may be noted that despite five and a half times larger industrial production now as compared to 1947 and a much more balanced and diversified structure of industrial production, its employment impact, particularly in the private sector, has been negligible. Thus, industry has not been able to change the occupational structure by taking a good number of people off the land. So much so that the labour absorption in industry falls far short of absorbing the natural rate of growth of labour supply in the non-agricultural sector itself. The efforts towards the growth of rural and artisan industries could not go far in increasing the supply of wage-goods, introducing technical improvements, increasing productivity, innovating new products, and in providing either additional or supplementary employment to the rural people on a scale adequate for linking agriculture and industry in a symbiotic relationship. The disjunction between agriculture and industry created by colonialism survives to this day, despite greater use of produced inputs, thanks to green revolution.

"Contrary to the original intention of the planners to strengthen peasant farming in the framework of co-operative village commonwealth, land concentration persists. About 12 per cent of operational holdings account for over 52 per cent of cultivated areas."

These changes in the system of production and its support system, impressive as they are, have been accompanied by many institutional changes. Abolition of monarchy in the former princely states, establishment of a republican democracy based on universal adult franchise, setting up of institutions of democratic decentralisation in rural areas, large-scale and recurring political mobilisation (electoral and otherwise), setting up of health and educational facilities, abolition of untouchability, policy of preferential discrimination in favour of the scheduled castes and tribes introduced far-reaching social change which became the forerunner of many economic changes. Abolition of intermediary rights in land, tenancy reforms and the legislation for agrarian restructuring (with all its limitations in enactment and enforcement) in the context of massive state investments in agriculture, allied activities and rural infrastructure, introduction of far-reaching technological innovations, strengthening of organised financial inter-mediation through commercial banks, cooperatives and land improvement banks, large scale state trading in food and other crops, etc., have introduced very significant changes in social production relations from above.

they rule the roost!

Contrary to the original intention of the planners to strengthen peasant farming in the framework of

cooperative village commonwealth, land concentration persists. About 12 per cent of operational holdings account for over 52 per cent of cultivated area. The big and rich farmers rule the roost in the rural and agrarian economy. In the sphere of production relations, fairly widespread capitalist farming (based on purchased inputs, including labour to a very large and growing extent, and production for the market based on profit calculus) has emerged to varying extent in different areas in the midst of numerical preponderance of peasant farmers. The number of

"The unfinished tasks of rural development are far more complex, acute and enlarged because what has taken place is growth without social justice."

small and marginal holdings has increased from 36.20 million in 1970-71 to to 50.52 million in 1980-81. Concealed and oral tenancies and disproportion between owenrship and operational holdings indicate that 'land to the tiller' remains, by and large, an unaccomplished task. This land relations continue to block agricultural improvements and limit labour use. What the official data on land holdings show is an inadequate reflection of the monopolisation of land because of the legal and extra-legal concealment of the actual extent of land ownership, which is the basis for concentration of social, economic and political power.

In brief, the rural India is marked by great inequalities, food insecurity and malnutrition, inadequate social and economic infrastructure, inadequate integration with industry and other organised sectors, excessive dependence on the state in a variety of ways, tremendous waste of human, physical and technological resources and the application of inappropriate (with large energy, capital and imports intensities) technology. As a result where current governmental efforts to do more of what has been done so far, i.e., extension of green revolution to inhospitable and less responsive regions, crops, classes of farmers, are leading to rising output with less than proportionate increase in value-added. The unfinished tasks of rural development are far more complex, acute and enlarged because what has taken place is growth without social justice. Agrarian restructuring along the lines defined in our constitution, laws, policies and plans has virtually been given up. Social tensions and their increasingly frequent outbursts in inter-personal, inter-group, inter-community, inter-caste and inter-class violence are tragic parts of the rural landscape.

and the 2001!

Instead of extrapolation of some numbers (based, of course, on certain assumptions about the socio-economic processes), we would try to speculate over the shape of things in 2001 A.D. based on the assumption that the prevailing socio-economic structure and processes and the nature and size of state interventions continue to operate. This is being done not because it is necessarily believed to be the most likely course of evolution, but with a view to picturing the repercussions of the course called "more of the same, though with greater efficiency". The present policies strands and the plan formulations tend to suggest that liberalisation, technological upgradation, computerisation, management improvement and toning up of administration, etc., are the main thrusts, along with continuation of the poverty alleviation programmes which are expected to raise everyone above the so-called 'poverty-line' by the end of the century. We are, for the sake of simplicity, neglecting the impact of dramatic and epoch-making technological breakthroughs like, e.g., in bio-technology, genetic engineering, etc. Not because such things are unlikely to occur or would not produce significant results, but because, if such fruits of science and technology can be successfully introduced within the prevailing socio-economic structure, they would be just palliatives and would introduce further and more complex contradictions.

Increasing farm production to feed a growing population, providing industrial raw materials and increasing the income of those section of the peasantry who own land in viable units at the rates achieved so far (i.e., between 2 to 3 per cent annually) is not outside the realm of possibility.

If some new technological breakthroughs become available a fairly likely thing, the rate of growth may accelerate, particularly for crops and regions not covered by the Green Revolution so far. However, the managerial constraint would also grow as the science-intensity of agriculture increases. It is doubtful if the rich capitalist farmers would be able to acquire the needed managerial capabilities for scientific agriculture. Given the state policies of incentive prices based on average cost of production of a technology giving less than proportionate results for the application of additional doses of inputs, it is unlikely that the farmers would develop cost consciousness.

"Social tensions and their increasingly frequent outbursts in inter-personal, inter-group, inter-community, inter-caste and inter-class violence are tragic parts of the rural landscape."

Moreover, some factors like the worsening terms of trade for agriculture, farmers perceiving feeling of being discriminated against vis-a-vis the industria-

lists and difficulties in finding sufficient profitable investment opportunities for their surpluses in non-agricultural sector would make the big farmers none too happy and none-too enthusiastic a lot.

the claim would grow!

Since the agricultural strategy does not make any attempt to redistribute land to generate really large scale effective employment, the chasm between domestic food production and availability of purchasing power in the hands of the indigent would grow.

New technology based on imports, modernisation and technological upgradation and increasingly private sector based pursuit of industrial growth are unlikely to release forces which can make industry a source of employment capable of taking the pressure of labour force off agriculture. This would in all probability highten the tension between the rural rich and the rural poor. This factor, coupled with the organised pressure of the rural poor, would weaken the incentive of the rich farmers to show greater positive entrepreneurial capabilities besides increasing the challenge to the state to maintain social tranquility.

To certain extent, some of them may branch off into industry, trade and other services and become small and medium-sized capitalists. It is the entry of the agrestic and merchant capital into small and medium enterprises, along with slow-expansion of the market for mass consumption goods (a combined outcome of failure to redistribute land, create sufficiently large number of jobs in agriculture, industry and productive services in the urban and the rural areas; since on some calculations as many as 35000 jobs a day have to be created for the next 15 years for reaching full employment; and inadequate size and effectiveness of poverty alleviation programmes) which would limit the scope for the artisans to graduate to the category

"Since the agricultural strategy does not make any attempt to redistribute land and generate really large scale effective employment, the chasm between domestic food production and availability of purchasing power in the hands of the indigent would grow."

of industrial producers and entrepreneurs.

the likely reverses!

The efforts to take the green revolution to the Eastern and the Southern States are likely to suffer reverses owing to resource constraint faced by the State and inter-class, inter-regional, inter-crop imbalances. The energy, ecological, foreign exchange and marketing constraints may also blunt the edge of those efforts. In fact in this exercise we have not referred to the ecological degradation and imbalances (deforestation, decline of soil fertility, congestion, pollution, salinity, interference with nature's cycle, etc.) and their impact on society, which may become more dangerous, for want of investment, conservation, appropriate technologies, etc.

As a result, the rural scene may witness many new trends. It is likely that the nation appalled at continued mass illiteracy and high drop-out rate moves close to universalisation of education. Political pressures and increased organisational strength and con-

The organised pressure of the rural poor would weaken the incentive of the rich farmers to show greater positive entrepreneurial capabilities besides increasing the challenge to the state to maintain social tranquility."

sciousness at the grassroots level would certainly tend to make more health, drinking water, civic amenities, electricity, etc., available in the rural areas. As the direct benefits of these improvements are concentrated in the hands of a minority, the rural areas may witness more intense struggles over sharing of the benefits and costs of public consumption. The pressures to migrate and frustrations of the immigrants may create a piquant situation pregnant with uncertainties.

and the key task

The key task in the process of rejuvenating rural India, or, for that matter, the entire Indian society, is to provide effective employment to our teeming millions. It means technology has to be used for producing two blades of grass where only one grew earlier, for use of local resources, for turning out new products falling within the paying capacity and preference patterns of the producers and for improving the known products All these tests have to be simultaneously passed by technology. As landlessness would grow through the demographic processes, land-alienation through debts and purchases of land by the well-to-do and conversion of agricultural land to non-agricultural one, the importance of wage-employment and self-employment outside agriculture would increase. This would mean that economic expansion and massive jobs creation has to be the means for triggering off a process of levelling up. Given our resource-endowments, technological possibilities and inter-play of social and economic forces, particularly the strengthening of the top owing to policies of batting on the strong a massive levelling up cannot succeed without being to some extent preceded and to some extent accompanied by a marked degree of levelling down.

Search for development alternatives, technological options and modes of social functioning and behaviour which may respond to the needs of the poor, the diseased and the unlettered are vastly different from

those models and options which answer the need of those who even in an international comparative perspective are not too badly-off. A simultaneous pursuit of the interests of everyone, with technologies,

"The efforts to take the green revolution to the Eastern and the Southern States are likely to suffer reverses owing to resource constraint faced by the State and inter-class, inter-regional, inter-crop imbalances."

management practices, product-mix, life styles and values of an imitative variety and within the framework of the existing social, economic and political structures have been attempted by us and many others with results contrary to the professed aims.

Thus, on the eve of a decade and a half which opens up a new millenium, an exercise of 'dowsing' the future can, at least, provide a touchstone for indicating the directions in which our past and present practices may take us. It shows that the present policy and planning stances are not even directionally poised towards giving those, who despite their temporal existence in the 20th century socially and economically belong to centuries long past; an opportunity to take a quantum jump into the 21st century both chronologically and figuratively. The preparations which are afoot for the purpose do not sadly reckon with the realities of social existence and its dynamics. Since I do not know what the worse-off might attempt on their own or in league with their allies, I had no means

"As landlessness would grow through the demographic processes, land alienation through debts and purchases of land by the well-to-do and conversion of agricultural land to non-agricultural one, the importance of wage-employment and self-employment outside agriculture would increase."

of taking that factor into account in this exercise. That is perhaps an area in which one might rely on the 'optimism of the intellect' and the 'optimism of action'.

(continued from page 29)

ensure a high standard of living and the experience of working together dissolved the private ownership mentality. This has been the manner in which the cooperative movement developed, e.g., in Bulgaria, whose rural development has been extraordinarily successful. It was also the manner in which rural society in China advanced in the early fifties before the disastrous Maoist experiment of the Great Leap and the People's Communes.

"Rural India needs almost everything simply because the vast majority of its inhabitants have so very little, in sharp contrast not only to the middle and rich urban strata but also the affluent in the villages themselves".

the co-operativised village

The cooperativised village envisaged here would not be a self-sufficient nor self-enclosed one. It would not be a return to the village republics of the ancient Asiatic mode of production. It would be a part of the modern socialist urban-rural continuum which, hopefully, would be *Hindustan Hamara* of 2001 AD and beyond.

But this is what we want. Is it what we are likely to get ? Eventually, yes ! But as matters stand today not within the time span of the less than 14 years that separate us from the 21st century. The forces of inertia and the strength of the rural elite as well as their linkage with the whole complex of state power in contemporary India are a formidable obstacle in the way of the realisation of our cooperative dream.

The landless and the landpoor in the villages today lack organisation and adequate consciousness. They lack any kind of significant linkage with the urban working class and working intelligentsia. They are still very much the objects of the historical process and desperately ravaged objects of exploitation. They are, of course, not the cowed and crushed lot that they were some three or four decades ago. They have begun to assert themselves. There is rebellion in some places on some occasions. But these are all too often like summer lightening which does not herald the storm. They have become expectant but more of favours from above than anything else. They are as yet without awareness of their identity, to say nothing of their power-potential. Archaic structures oppress them and archaic consciousness bemuses them. Their release from these is, as yet, on a mass scale an escape into the illusion of deliverance by saviour. But without their awakening and their organisation our cooperative dream would at best be a mirage and even a cruel joke.

The Indian village would be the last bastion of reaction to fall before the onrush of the forces of social revolution and national regeneration.

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This 'crisis' and the call of the hour

S.K. Dey

Recall that midnight call of the 'tryst with destiny', followed by that oath in the Consembly, and, pleads the author, ask yourself honestly, have we done what we really needed doing to redeem the pledge. Or else, we, wittingly or unwittingly, did just the opposite and face this sordid scenario of 'the two Indias', 'the two nations within the nation'. Could we, even now, reverse this process and take to, what is called, 'human engineering'.

WHAT FOLLOWS IN THIS STUDY can have meaning or relevance, only if two basic questions are answered. It is assumed that August 15 "1947" in India has been a crossroad then, between 'yesterday', 'today' and 'tomorrow'. The second question that seems to emerge from what the editor wants is, "the exercise on the rural scene in Two Thousand and One." This becomes evident from the fact that life arose from within the soil of the earth. It must, therefore, be rooted to the earth, if life were to remain secure, skyscrapper and space notwithstanding. Special care needs, therefore, be taken to ensure that the core remains free of digression. This is so, more specially, because the subjects are inclusive rather than exclusive. The contour demands a hypothesis that can act as background to the contents that follow.

The origin of the universe—the cosmos—is important. But the human mind developed till now, seems totally incapable yet of playing in this field, despite the "grand explosion" theory propounded by some. The prophets of heaven, hell or doomsday may, therefore, be left alone. The existence of a God or Gods in the over-lordship, no matter what religion, scriptures or fables define, may be treated likewise. Fertile or imaginative minds may speculate in whatever style that suits them as a pure exercise, or as a profession in varying garbs. However, if laws did not prevail totally free of man's idiosyncracies, life, matter or spirit would cease to have meaning or coherence so as to sustain, serve or explain anything whatsoever.

Therefore, the exposition here is based on the thesis of the cosmos being a continuum, so also life.

Our senses highly circumscribed even in the most sensitive, can but lead to one tentative conclusion. The cosmos as well as life are on cyclic expansion and contraction. Nothing ever is gained or lost in the seeming "Nirvan Kunj" or eternity, no matter from which angle one looks at it. Man, the latest of the species, is a complex. He will appear to have evolved towards a balance between matter, mind and spirit. An approach such as this alone seems to explain life as an adventure, and man the pilgrim till now as a Musafer on the cosmic stage.

'Panchayati Raj institution stand mate replica minus elections, round the country, to parody the dreams of Gandhi and Nehru in an age lost and forsaken behind. These act but as puppets at play."

the "tryst with destiny"

Coming back to August 15, 1947, it is impossible to rival Jawaharlal Nehru, even though he can be comprehended only after some decades yet ahead. He had proclaimed, "at the stroke of midnight hour when the world sleeps, India will awake to life and freedom......a moment comes.....when we step out from the old to the new... The past is over and it is the future that beckons to us now. The service of India means the service of the millions who suffer. It means the ending of poverty and ignorance, disease and inequality of opportunity....peace has been said to be indivisible; so is freedom, so is prosperity now and so also is disaster in this one world that can no longer be split into isolated fragments."

This was followed by an oath of every member present and of the Constituent Assembly of India, "to dedicate oneself in all humility to the service of India and her people to the end that this ancient land attain her rightful place in the world and make her full and willing contribution to the promotion of world peace and the welfare of the mankind". 2001 cannot be understood or envisaged but as a sequence following August 15, 1947, Nehru's statement and the midnight oath in the Constituent Assembly.

Nehru shifted from his simple house at York Road to "Teen Murti" after Gandhi was no more, through designs of others over his naivety. The mansion notwithstanding, he lived as a commoner. It turned into an open house to which entry of no citizen was barred. He struggled till the end to pursue the "tryst with destiny" to which he stood committed. Every feature of India of yester years he ached to usher in, bears imprint inaffable of the man, his body, mind and spirit. Coordination between all sectors of development, especially in the wider rural scene, found a new expression. It was "community development" as a binding force between rivalling agencies despite their erstwhile indifference to development. People were brought in from the ground up to the Centre institutionally, as an integral part of the process. The aim was to get man transformed both as the means as well as the end, in tune with the ecology in space.

the man's vision!

Democracy alone, concluded Nehru, could cut across the ghosts of centuries that haunted the heartland of India ranging from the pre-Buddhistic age onwards. "Panchayati Raj" was Nehru's contribution to political democracy down to the grassroots. 'Sahkari Samaj" was to be the living emblem of economic democracy from the village up to the Centre. This was envisaged as a balancing force between the public and private sectors on an integrated landscape. "Social democracy" had to emerge free of violence. This could be feasible only through the interplay of democratic forces between the scheming "few" and the mute "many". Institutions came up all along the line from the Lok Sabha to the Gram Sabha. It was inevitable that with the ghosts active or dormant in most of us it would be a time consuming process, with its natural ups and downs. Age of talisman lay buried behind. Science and technology had already begun to question all doctrines and rituals. Nehru had a wide and unerring grasp of history, thanks to his recurring confinements for long periods behind prison walls. He could survive as himself but hrough studies, writing and a penetrative introspection.

Coming to the wider horizon, he had an unrivalled vision and conviction over the meteoric speed with which the world had begun to shrink into a village. Life necessarily acquired a visible, palpable indivisibility, North, South, East, West could but have geographic meaning—not biological. America, the "new world" had been receding fast into a paranoia back to the old world out of which she had escaped in revolt. USSR with associates, were caught up in revolt of a different kind. The Second World War had spearheaded the bipolar world, its genesis and the growing gulf between poles opposed to each other. Nothing could explain more brutally the basic keys of divergence. America pioneered assistance to Community Deveopment. But she withdrew when the programme envisaged Panchayati Raj and Sahkari Samaj. Industries were refused help in the public sector. India had to depend largely on the socialist block, but free of malice to America, Friends of

"The Block headquarters under the new delimitation of rural India, are largely public relations institutions for those in power. They are minus the coordination between inter-related departments, which had been the most significant achievement under Nehru in Community Development movement."

India were treated as enemies, enemies hugged to bosom with help free of limits. The brazen split notwithstanding, Nehru maintained a balance with both. He safeguarded the nation's nonaligned stand in a situation that could have bewildered and baffled a giant.

One may now look at the imperial thrust of America in Asia, Africa, Middle East and specially in Latin America, following the perversion and prostitution of the "monroe doctrine". This is one phase of the current landscape. On the other pole is the socialist camp, headed by USSR at one end and China on the other. The phenomenon is similar in character but with some finesse. The growth of armaments, their potencies and spread on earth and now in space are a lunacy bewildering even to a buffoon. 2001 is caught in between. A conflagration at a world level, with total extinction of life, for a cosmic period, is not entirely outside the realm of possibilities. Can India isolate herself from the rest of the world village ? Is it feasible even as a philosophy political or mystic? Today's groan over the world in cosmic agnoy is inevitable, inescapable.

and as life goes !

One must come now to the Indian scene envisaged by Nehru. We must also reminisce the dream of the Mahatma. He expected that independent India

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"The new status symbol now coming to play is a coloured Maruti, a coloured television set, the video and the library of cassettes, the most modern decoration and furnishings. The reflex of thinking and the style is conspicuous in television or in any magazine one wishes to pick up at street corners."

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would act the pioneer to lift all nations, down and out, under the shackles of colonial rule. Further, she would evolve the pattern for freedom and reconstruction from the roots up, as models, to help inspire others. Mahatma had been assassinated. Nehru is gone. He is in the archives in kindliness. He is held guilty by many, of all opportunities lost ever since independence and what followed. Not an insignificant section of the neo-elite, as well as the affluent, twist their nose as sop to their uneasy conscience. The public sector industries established by Nehru, a significant number today are a larger simulation of Native states under erstwhile British regime. Government confined to the North and South Blocks during colonial times has expanded along both sides of the Rajpath virtually up to the India Gate. It is then spread out to all parts of an ever expanding metropolis.

The giganto-mania of Delhi from four lakhs early 1947, led to 4 millions in 1968, and to near 8 millions in 1986. The city today is claimed to have a million vehicles. The traffic—pedestrian, bullock and handcrats, cycles, scooters, cars, buses, trucks, vie with the biggest cities of America minus the imperative discipline. It continues expanding so fast that it threatens to exceed 12 million by 2001. Centre can expand only through usurpation of state authority, responsibility and resources. The regalia of states must find expression in bricks, mortar and steel nevertheless. So cities expand all across the state capitals and the metropolitan areas apexing at Delhi, the capital. Even-handed extension of science, technology, industries and development, find pious expression in text books and government publications. Panchayati Raj institutions stand mute replica minus elections, round the country, to parody the dreams of Gandhi and Nehru in an age lost and forsaken behind. These act but as puppets at play. The cooperative commonwealth is reduced to a game of musical chairs in politics. Social democracy is a subject to be taught on the basis of text books by professors with their base in western libraries and authors.

this deep decay !

The Block headquarters under the new delimitation of rural India, are largely public relations institutions for those in power. They are minus the coordination between interrelated departments, which had been the most significant achievement under Nehru in Community Development movement. Thana headquarters expand to house and serve ever growing number of police and auxiliary personnel with varying designation under the alphabet. Sub-Division and Tehsil headquarters throughout the country had organic rural connections. These are in decay both in size and quality, professedly because of the lack of resources. Indigenous cottage industries and crafts, once the pride of Indian life and culture, are on flight largely to international exhibitions. The one way traffic of man, material, resources and initiative, grows at alarming pace to feed centralised industries whether private or public, with increasing foreign collaboration. All cities are now being split between the neo-elite and the growing slum dwellers. Resources in a nation for organic growth, as envisaged by Gandhi and Nehru, should have flowed to the countryside to offer nutrition to the famished roots of India. But Jhuggis and Jhopries in geometric progression, out of the growing slums, offer pocket boroughs for local patriarchs in cities.

A quotation from the author early 1967 in his book, "power to the people" may find an appropriate niche here. "Gandhiji asked for decentralisation of politics, power, production, distribution, culture. We have gone about in a reverse gear on a crash programme of towering centralisation...We are out to build a pyramid of civilisation in India, with its apex in steel and cement leaving the base and intermediate layers to stand on bamboos, chatais and in mud. The

ocean is bound to rise at last. When the deluge follows, others from the wider horizon will join the fray. It is not entirely outside the realm of possibilities that the battle of Kurukshetra may have to be fought afresh on the soil of India all over again".

a state of flux now !

The new Government of India today is in a state of flux. It is headed by the youngest Prime Minister ever, with noble and radical intentions. He tries gathering around him his likeness from public schools with excellent background of managing machines and buttons in what is called in modern parlour, a "system approach". Garibi Hatao is there as a target. But "21st century" and our arrival there the soonest and the fullest for vying with the world of modernity in western nations is the prime new urge crowding the communication channels. The new status symbol now coming to play is a coloured Maruti, a coloured television set, the video and the library of cassettes, the most modern decoration and furnishing. The reflex of thinking and the style is conspicuous in television or in any magazine one wishes to pick up at street corners.

The new Prime Minister addressed the Chief Ministers in strident notes on Panchayati Raj for devolution of authority, resources, responsibility and elections. One wonders if one should smile or cry, because Madhya Pradesh, which had abolished the community projects as both a programme and concept, seems to have been the first to respond to the Prime Minister ! Cooperatives spread out to different ministries are now left to fend for themselves, the way we know how! Our big industrialists with their concentric interests look happier than ever, despite occasional irritations. The rural population still constitutes more than 75 per cent of India. The bulk of it drudges in poverty, the affluent counterpart migrating to the cities in a one-way traffic with their neo-elite children. From the masses minus land or with marginal holdings, the same flow continues but in growing numbers with some hope in the megaurban settlements.

Colonialism which acted once as the absorption media for imbalances within western nations, in the sudden burst of science and technology has no direct scope any more today. Tension and conflicts between developing nations are engineered to promote new style of neo-colonialism. The media of socalled higher technology embraces the local elite and the expatriats. Tools of wars, obsolescing in the west, find rising market in wars between neighbours. United Nations, that held the hope of a world forum for peace and freedom, for man and nations, is already under increasing attack from expected quarters. The perspective on the wider horizon is bleak.

the two Indias

Within the nation we have almost arrived at the uneasy and shrivelling truce between two Indias. The socialistic pattern initiated in India as a new ideology has come in handy in a reverse gear. Bureaucracy, the oldest ever since man came out of his cave dwelling has its major concern in survival as a class. Mobocracy in politics finds ready champions in the illiterate power mongers. Plutocracy never had it as good, for after sucking the cow totally dry, they can pass it over to the embrace of the public sector as champion socialists! We stand on the brink of a major crisis in history. "The two nations within nation" as obtain brazenly in Latin America, thanks to the big uncle, seem to be on their way sharply to India also.

The Bipolar world hostile to all strenuous efforts towards reconciliation, adds further and deeper to the tragedy that threatens to trigger. As if Frankenstein is out. Frankenstein is about. To quote from a book, "the far has come near, the near has gone far". Is the current age a historic transition towards a renaissance across the little world village as a whole? Or it is but a nemesis. Gloomy enough ! But history has throughout been an epic of contradictions, as well as two-way traffic. Is there a turning in sight or even in prospect? Crisis "Today" always demands a look back to "Yesterday", if the key were to be sought for "Tomorrow". India in every sense of the term must offer lessons enough from behind. Could we do some mental and emotional reconnaissance of the thoughts and actions of Nehru the pathfinder as refinement of those behind, of his master the Mahatma? Could we explore these in the current landscape? Is terrorism an unpredictability in human character or it follows as logic from the seeds we sow? We try to talk wisely about conscience. But "kis liae", "Kiske liae"? (for what, for whom).

do some introspection !

A hungry man unsure of his shelter or any semblance of food for the day, even potable drinking water, damns freedom and conscience both as inventions by the wily. Hunger, outer as well as inner, is the profoundest of teachers in life. Our leaders who have never tasted the pangs of hunger, must do some introspection down to the bottom of their hearts. They may also seek advice from others of their like, of course not from the gerontocracy now in belligerancy. They may have a peep at the bulge in the abdomen of allies in politics, that strides forward as they walk, as living emblem of excessive nutrition unassimilated, excelling the *Seths* in the *Bazaar*. Politicians in power, the majority of them, reflect the typical physiognomy. Now, there is dire demand for change. The common man groans with his instinct. He can no longer be taken for granted. Nehru had the body, mind and heart attuned to this land. What he taught and pursued could still be invoked afresh with

(Continued on page 57)

Action is called right now to avoid a rude shock !

Bunker Roy

With this poor perception of rural realities; this tragic pattern of land ownership; this fondness for borrowed models and this so-called strategy of raising families above the poverty line, we are, says the author, heading towards a rude shock. And, he adds, if we do not act right now and 'hasten' to reverse the process, our rural scene in 2001 will see a sea change, yes, for the worse.

IF PRESENT TRENDS CONTINUE the rural scene will change beyond recognition—for the worse. The urbanisation of rural areas which seems to be the answer of all the urban based experts to all the human problems in the rural areas is going to have disastrous results by the turn of the century. If we keep looking at it—as we are—as basically an economic problem, give importance to viability and balancing of the books, designing schemes to raise, temporarily, families above the poverty line and then expect them to stand on their own feet we are in for a rude shock. We have not yet developed our own confidence to come up with Indian models typically and uniquely ours that defies description: we have become slaves to what the West says and it is bound to make sense if we have voluntarily surrendered ourselves to years of subtle brainwashing in the West, in the World Bank, in the schools and colleges in the 1st and 2nd World who are basically clueless about rural realities in India. It takes a long time for damage to be felt because this country is so large but I imagine by 2001 we will have realised our mistake but that will be too late.

Mahatma Gandhi and all the sensible things he said about the development of rural areas will have long been forgotten. Already what he said about village self-reliance, about rural communities depending on each other, of production by the masses instead of mass production is falling on deaf ears as if he is outdated. In 1967 when I started working in the villages I used to think he was a bit of a crank and without knowing I looked down on what looked like alien ideas. Now in 1986 I cannot help but wonder at the vision of the man. He will remain

relevant in 2001—but only to those who know what rural India is like, what lives the people lead, what problems they face and where the solutions lie. But the number who feel Gandhi to be relevant in 2001 will be very few. Unless people, experts, policy planners and others who think they know how to develop the rural areas actually start living with the people and seeing for themselves, the solutions will be hard to find. In 1986 you find very few such people living and working with the rural community.

"In 1967 when I started working in the villages I used to think Gandhiji was a bit of a crank and without knowing I looked down on what looked like alien ideas. Now in 1986 I cannot help but wonder at the vision of the man. He will remain relevant in 2001".

In 2001 they will be extinct. Because distance planning is already a fashion. Playing with machines and designing schemes for the rural poor in an antiseptic atmosphere is neality. The smell of mud, dung, 'of goodly rain on dry ground', of dust and homely dirt of tea shops · the environment of pain, insecurity and exploitation : the conflict of ideas, approaches and methods : to exchange of experiences, life styles and ways of thinking and acting : the tension that precedes change and results in a feeling of liberation is all a part of a process which cannot, indeed, must not be shortcircuited With the coming of the impersonal expert who does not believe in this process of learning and unlearning, of not forcing the pace the rural areas are not used to, of showing an arrogance and confidence that comes from acquiring a degree in rural development from a foreign university and feels he has 'arrived', this breed we are going to see more of as we get closer to 2001 and they are going to be the death of us.

this T.V. onslaught !

One indication is the growth of television, the impersonal medium that allows no feedback, no exchange of ideas and no questioning of the information being disseminated By 2001 more than 400 million people in the rural areas will be forced to look at programmes that have no relevance to their daily lives. They will be forced to urbanise—or perish. It is the middle class that will control this medium and who are already planning for the rural poor. By 2001 I suspect they would want the rural identity to completely disappear. Programmes costing between Rs. 30,000 per hour to Rs. 15 lakhs per hour are being designed for audiences whose total earnings do not exceed Rs. 3,500 per year. One hour of entertainment costs the equivalent of three hand pumps providing safe drinking water or the cost of running 90 primary schools for one year. What they call programmes for education, family welfare, rural development, women's welfare supposedly designed for the rural audiences are so useless that they only serve to give employment to someone's relative, foreign-returned with a degree on rural communication.

I see a trying time for the rural poor. Already there are forces heavily against them developing themselves. Government is supposed to help them with schemes, subsidies and programmes but, on the other hand, they have been made so dependent on the system that I very much doubt if the intention ever was to allow them to stand on their own feet. By 2001 the dependency will be total—and that too on a handful of people. The 3 per cent of the rural rich who own 30 per cent of the total cultivable land will see that technology becomes a tool for exploitation. Already there are indications of the law and order system in the villages being used in favour of the rich and land grabbing cases are on the increase but are not being registered by the police. If 35 million households or about 45 per cent of the total number of rural households own no land at all or less than 0.4 hectares by 2001 their future looks bleak indeed Two thirds of the agricultural labour households in this country are already in debt and it is not likely to get better by the looks of it. I am quoting government figures so the situation must be much more alarming than it has been made out to be.

poor delivery system !

The delivery systems today are nowhere oriented towards making the rural areas a better place to live in. The educational system has ensured that four-fifths of the doctors coming out of Universities live

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"By 2001 the dependency will be total—and that too on a handful of people. The 3 per cent of the rural rich who own 30 per cent of the total cultivable land will see that technology becomes a total for exploitation".

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in urban areas where one-fifth of the population live, and 5 million die every year in the rural areas of exposure, poor nutrition, non-immunisation and lack of proper medical attention. The educational system has made sure that the literate, the more literate and even more literate (what we mistakingly call higher education) never come back to the village. Looking the other way—Jaipur, Delhi, New York—is supposed to be looking ahead. Coming back to the village after receiving a degree (not education) without getting a government job is doing something

wrong. Wanting to help the community develop themselves without a secure salary means you have not received a good education. The new Education Policy (1986) has suggested a way out, of de-linking jobs with degrees but again people are interpreting this in a narrow, conventional and limited sense and equating it with employment.

Never having lived and worked in a rural area I do not suppose educational planners realise the significance of implementing such a policy. If it is implemented as it should be it will have far reaching repercussions by 2001 in the rural areas. It will allow village resources, village skills and village knowledge to be used for the first time for rendering services for development purposes. This will enable village para-professionals dais—village level health workers, hakims, vaids, water diviners, bone-setters, hand pump mistries—to provide services without having to get a paper degree certifying they are qualified to provide such a service.

The biggest threat to development as I have said before, is the Educated Man who flaunts his degree and thinks he is indispensable in the development of rural areas. But it is the doctor, the engineer and the teacher who uses his degree to exploit the community, misuses his qualification for corrupt practices and abuses his knowledge for his own advancement at the expense of the community. If and when services (jobs) are de-linked from degrees his hold on the community is minimised, his place in rural society that he has found for himself will be devalued and genuine community involvement where people can depend on each other can take place. The resources and skills of the community so far have no place in government planning and implementation. The community is only supposed to act as recipient, be takers and not givers and such one sided systems will eventually make beggars of them all.

If we are talking of making communities self-reliant, of using their skills, of mobilising the resources they have and of responding to their needs—all noble sentiments expressed eloquently in government plans and documents, then let us at least make an attempt to practice what we preach. In 1986 the communication and credibility gap between what we say and what we actually do has never been wider. To prevent it from increasing by 2001 in the rural areas drastic steps will have to be taken and I imagine the time has come to take some hard decisions

and the crucial issue!

The issue is the limit to government interference and involvement. There must be a limit beyond which it is uneconomical for government to post people or provide a service. Already, according to late Raj Krishna, for every Re. 1 of input it was costing the government Rs. 5. It is not only becoming prohibitively expensive but proving to be inefficient and from a management point of view totally unacceptable. But the argument being put forward is the rural community are a bunch of crooks and in order to ensure better accountability of public money the recruitment of government personnel is a must. So instead of the community making money it is the government functionary making money in the name of better accountability. A hard decision will have to be taken that beyond a certain point the responsibility of planning and implementation, of collecting resources and providing a service must rest solely on the community with government playing a supplementary role—like providing training, equipment, hardware and so on. The government machinery has become a monster out of control.

This is one of the reasons why the role of voluntary agencies has become so important and I am certain that by 2001 they will be a force to reckon with in the rural areas. The social action groups in villages today all over the country when seen collectively are no longer a drop in the ocean. Because it is government's job to see that public money is used more effectively : because we notice the impotence of government to control and discipline the system from below and prevent leakages : because we see government interference and involvement has led to poor involvement of communities in the planning and implementation of their own programmes: because we see little or no accountability within the system either to the community or to the government; the role of voluntary agencies has assumed tremendous importance. Government has started seeing the wisdom of channelling funds to voluntary agencies for antipoverty and minimum needs programmes. But voluntary agencies have been suspicious of government' motives for such a long time —and with good reason—that it will take time for some of us to unbend. But there is no doubt that the atmosphere is right for sitting across the table and negotiating an understanding on our terms on the basis of which we shall take government funds.

If there is any hope of introducing progressive ideas in the development of rural areas by 2001 it will depend on the extent to which the social action groups will want to be involved. Forums for removing deep-rooted misunderstandings will have to be created. Procedures to make funds more accessible to smaller groups will have to be simplified. Institutional support when smaller groups clash against vested interests while introducing progressive ideas will have to be forthcoming without reservations so that the rural poor have a say in their own development. 2001 will see the tangible results of such processes taking place now.

Living in 2001—a crowded, tangled future

Romesh Thapar

One thousand million people moving into the 21st century. Yes, only fourteen years away that is the propaganda vision of the ruling politicians and their hangers on. It is propagandist because it fails to tell us that the 350 millions who go to bed hungry in the India of today will be some 500 millions in the India of tomorrow. That is the sorry and cynical logic of the development style we have adopted. A sovereign decision, believe it or not

WE HAVE CHANGED A GREAT DEAL over nearly forty years of freedom, but the patterns of poverty, even destitution, change very little in the modernising culture of development. We have certainly produced an affluent vanguard of some ten millions, supported by nearly 200 millions in various stages of "growth", whose urban ambience is envied by the farmers in the rural areas who can't make two ends meet. But this changing superstructure sits astride the poverty-stricken.

EVEN IN THE AFFLUENT ENCLAVES of twentieth century India, our numbers are taking over. Anyone who has eyes to see, and a mind capable of simple thinking, knows that the bus services are breaking down, the hospitals are in a state of collapse, the banks are not functioning at any acceptable level of probity, the food reserve lives on tentative, unchecked figures, the projects of electricity generation, steel and coal production, cement and fertiliser, drugs and chemicals are terribly overstaffed and now a part of one of the highest cost economies in the world, that the forest cover is disappearing causing floods each year, and drought. Development should have curbed our baby-making. It has done the opposite because it failed to dissolve poverty. For the poor, babies are "earners", whatever be their level of earning.

AND THE BABY-MAKING will continue whatever the political passions behind family planning and planned parenthood. The poor are caught in the "red triangle". No one bothers about the "red cross", the medical network to support the drive to have fewer babies. Vast areas of the country are unserviced with the minimum medical support systems to help our women who inevitably bear the burden of using largely untried gadgetry to curb pregnancies. The male beast remains a beast,

satiating his sexuality, unmindful of the burdens he is creating for the future. No one sees the links in the chain. The faceless millions remain faceless.

IT IS THE LAW of present-day development that the urban enclaves will act as magnets drawing millions from the countryside, particularly the poor whose hunger keeps increasing because there are too many mouths to feed. The migration to the cities is developing like a flood. Urban populations cannot but double as we enter the twenty-first century. When we look back on today, Calcutta, the city of trauma and despair, will appear as a dream city. No amount of tinkering will change the prospect. Only a radical alteration of priorities which salvage our crumbling villages and turn them into magnets, capable of holding and sustaining our people, can save this sub-continent.

I DESPAIR OF ANY SUCH CORRECTION. Already, the attitude to public despair is to place it on the head of a corrupt police, inefficient officials, grasping politicians and insensitive professionals. We forget that the human environment is such today that very few can survive with humanity or integrity. Indeed, integrity is to be equated with private wealth or simple living. Both are under attack by the manipulators of power and privilege. The ruling elites plan their future in even smaller enclaves—protected, of course, by private armies. We can see this "culture" crystallising on the dung heap that India is becoming. All is well so long as we are the flies on the dung heap.

THE PRESENT THRUST into the 21st century is in truth a movement step by step from cow-shit to bull shit. The statistics, if not fiddled, tell us of "India's" prowess. They never relate to the individual Indian, particularly those living at the so-called grass-roots. That is why we never understand the stirrings in our society, stirrings which are today threatening to tear us apart. There is the terrorist youth who has no job when he moves into the towns, forced to live on smuggling, heroin peddling, criminality, and who is only too happy to clothe himself in religious garb—and there are our communities, tribes and castes persuaded to uphold medieval laws and to see certain sites as "holy" even though they have no access to research, study or truth. The mob leader is supreme in this over-populated, stupidly governed land. He is able to silence those still possessing good sense with a show of muscle, or what is called voting power. Democracy, too, has become divisive. It awaits a liberator but might get a conqueror.

DONT TALK OF EDUCATION. It fell by the wayside several years ago under the hammer blows of competing ideologies. The so-called explosion of literacy has become an explosion of religious revival. There are no books in the languages. Reading means religious texts. There is no search for knowledge. The aim of the brightest and best is to get a passport to other lands, never to return. The computer is no answer. If you feed it with rubbish, it is rubbish that will be returned to you. The exercise of today, refusing to accept the errors of forty years of freedom, are such rubbish. The think-tanks are constipated with this rubbish. Where can we look for the scenarios of change ?

WHAT DO I SEE of the future, of 2001 ? A massive breakdown of the facilities that underpin ordered civilised life. I see drought across large areas, persistent drought because the forest cover is no more and the rains do not come. I see a kind of desertification which no tree-planting can halt. I see famine deaths and migrations, particularly of the poor seeking pastures that do not exist, and of the rich pushing their way into foreign lands where empty space exists. I see the growth of millions of havens in our land where clusters of people cogitate and meditate, awaiting the arrival of a new dawn. It could be anything, probably brutally authoritarian to bring order to chaos—that is, if we are not engulfed in a nuclear cloud.

YES, IT IS STUPID to talk of future in these terms. There will be many of us who will fight back, try to persuade those who have the power to change directions, to halt the drift to the kind of chaos I have described. But will we be able to persuade the more fortunate that there is no future in land of 1000 millions, or more, unless they think and plan for the less fortunate, for the lost and the damned. Maybe, we will win. But I despair.

TWENTY YEARS AGO, at an International Roundtable on Jawaharlal Nehru, sponsored by UNESCO, I proposed before a remarkably sensitive and perceptive gathering a project to open the doors to "a new design for living, a design for development." This project had the support of Prime Minister Indira Gandhi and was unanimously adopted by UNESCO at its General Assembly of 1966. I reproduce the design :

"A new design for living : a design for development

1 I speak of the free enterprise and centralised planning concepts. Both groups of protagonists have found themselves in this race for more or less identical goals, which the developing societies are unfortunately seeking to imitate. The goals demand the acquisition of more and more material goods at the cost of social growth. This is the value system which underpins both the planning frames. The deep cynicism which is today sweeping the advanced protagonists of these perspectives is illustrative of the confusion which grips us We have, in fact, failed to control for human good the revolution of science and technology which is already upon us and we are reluctant to admit it. Learning from the past, when the industrial revolution was allowed to spawn its many aberrations, we have to sharpen our awareness of the consequences of present trends and act now to motivate our people into what will inevitably be a new value system capable of nourishing the disciplines which we need.

2. For developing societies like India, this matter is doubly urgent. Whereas the developed world has completed its industrial revolution and is now deeply convulsed by the first repercussions of the revolution of science and technology we are coping with both revolutions simultaneously. The complexities are, therefore, immense in terms of establishing priorities and utilising our limited resources to the optimum extent. All that our concept equipment consists of at the moment is a mix of the theories of the Fabian England of the thirties and the free-booting USA of the early part of this century. The mix is irrelevant in today's situation. In this context, when I speak of the challenge of science and technology in developing societies, I summarise it in the phrase, 'two revolutions in one'.

3. Because we have been so thoroughly brainwashed by present-day mass media, I will have to dwell somewhat on the malaise which afflicts us.

4. All societies are evolving organisms and we as the moulders of these societies must learn from the extension and liberation of human knowledge in the last over 200 years. If we are all in the process of evolution, we must understand what we are evolving towards. And we must project our comprehension of human activity towards achieving this vision. Clearly, only that change is worthwhile which humanises man. We have, in other words, to conceive this change, engineer it, and then make it part of the consciousness of man.

5. When we look around this world of ours we are astonished not so much by the contrasts in social patterns within human societies as by the similarity of the problems which are being sparked in the course of rapid scientific and technological advance. This general phenomenon, unaffected by the act that development in various regions is at different levels and is planned at different speeds, does suggest that we must now address ourselves to the question of fashioning what has been called 'the understructure' of possibly the first true world civilization.

6 It is a challenge which cuts across East-West and North South divisions, for if the understructure is defective or unbalanced it will topple the edifices we are seeking to build. The past tells us how human society became a slave to its technology There is a danger that technology may remain a deity—whether worshipped in high-powered mass media or projected in the neon lights of metropolitan cities or expressed in the aspirations of the developing countries. It must become what it has always been intended to be—a tool in the hands of man with which to improve, if not perfect his life on this planet. This task demands the collective thought of the creative intellectual wokers of the world.

7. If we were to reduce the understucture to its various components, we would find that the most critical element is the value system which has come to be associated with what we call 'a standard of living' More and more are people looked up to for what possessions they have, or what they own. Status is counted by the make of your car, your refrigerator, (your TV), your radio. What is somewhere being forgotten is that all these goods were only meant to assist man. The means are, and in some societies have become, the end. We are thrusting into the future without any clear idea of the quality of life we want to give ourselves.

8. This lack of objective affects all societies developed and developing. Those which have advanced to a certain stage of affluence are in the grip of wasteful living, despite backward enclaves. Those which are beginning to advance, and which already possess pockets of affluence, are damaging their limited resources in imitating wasteful standards.

9. If it is our intention to humanize man to elevate him above his present wretched conditions to a level of simple, aesthetic living within the foreseeable future, then there can be no running away from the forgotten business of making a critical assessment of the relevance of so-called affluent standards to different cultural patterns, and of the specific needs and the more fundamental values by which man should live.

10. Our world is witnessing traumatic transformations in science and technology. In their totality, these transformations should have reduced the tension in man's life. That is the function of progress. But, in actual practice, the opposite is true. With every advance, man seems to be more and more bound to the routine exercise of living, defeating the very purpose of man's effort—leisure. The uncontrolled impact on man of all this development has dehumanized the very processes of development, but the world is at last becoming more conscious of the pressures which push us into habits and value systems which generate social tensions, exhaust and destroy the gains of decades of endeavour. Voices are being raised to warn us against our accepted notions of what constitutes the good life.

11. Indeed, the more one investigates the prevailing concept of 'a minimum standard of living', the more one is surprised by the excessive human needs and interests embodied in it. Yet, ironically enough, all economic and social planning is conditioned by our unthinking acceptance of the inevitability of enthroning such a standard.

12 If the past of man is a teacher, then let be learn from it.

13 Many factors contributed to the decay of the great civilizations which flowered on this planet. It is significant that decadence was 'sown' when the civilizaiton of the past reached a level of contemporary affluence, when opulence and luxury began to eat their way into the firm fibre of the people. We are again, in our own times, witnessing some such development despite the glaring contrast of depressed living standards which prevail for an overwhelming majority of mankind.

14. Today, conspicious, wasteful affluence is not confined to this or that region. Pockets of such affluence exist everywhere, infecting values, damaging human relationships, creating alienation within the orbit of affluence and feeding the desire for imitation in circles not-so-affluent. Indeed, international tourism, a major world industry, is a leading influence in this direction despite its cultural pretensions. Every survey indicates that the preferences of the affluent dictate tourist infrastructures the world over.

15 In the context of a population which increases more rapidly than our present capacity to mobilize resources, and the need at every level intelligently and creatively, without frustrating individual expression, to control the demand for more and more of what is not really essential for the development of man, it is necessary to inculcate new principles of civilised living and at the same time to engineer the basic materials which are an integral part of it. This design for living becomes in a sense a design for survival on an essentially human plane of dignity.

16. The rationale for such an approach is compounder of the realities around us. We speak with feeling about the simple, satisfying life, the cutting down of unnecessary consumption, the perils of status symbols which distort tastes and values, the contradictions between thought and practice which makes a mockery of the pretensions of our civilization. Yet, little is done at any level organisationally to translate feeling into action.

17 On the one hand, we are the unconscious proponents of a way of life based on waste. On the other, to create the material for this waste, we work overtime. In the process time itself becomes precious, something which is employed to amass the resources for wasteful spending upon which individual—and new, even national—status depends

18. This equation between individuals and the nation is not un-scientific. If we were to subtract the time taken each day to produce materials for the wasteful life in affluent enclaves the world over, we would realise what a self-defeating business it is because it destroys or restricts the

possibilities of creative leisure, to increase which, after all, should be the objective of all social and economic activity.

19. And this is a cult which is taking root everywhere. Dreams of a life as lush as in the glossiest of magazines reflect natural desires and strivings, but these should be given fresh and meaningful content if we really intend to ensure a stable and meaningful existence for the depressed millions who comprise two-thirds of mankind and who are rising to claim their place in the sun.

20. This approach has nothing in common with the activities of those who romanticise primitiveness, who seek relevance in a revivalist code, or who search for personal salvation in the extremes of nihilism and regimentation. In fact, these are the aberrations spawned by the unresolved contradictions developing in our world civilization.

21. The widening gap in the technological development between the developed and developing nations produces a similarly widening gap in the living conditions of the people With increased communications, this produces in the developing world a set of aspirations which are identical to the aspirations of affluent societies, but which have no possibility of realisation The frustration of this unfulfilment increases with every technological advance and reduces the possibility of any base for lasting peace. The mind of man must therefore apply itself to this problem. It must evolve a set of goals for the future which are relevant to both societies.

22. To confront the challenges facing us, we have to asses on the one hand, the complex crisis of peace in our shrinking world and, on the other, the crisis of the human mind reacting to the situation which surrounds it. The two crises are closely related. They have to be tackled simultaneously. Effort at one level is defeated by inaction at another Our apparent inability to grasp the total situation makes us victims of the very forces we create and over which we have less and less control. Much has been written about this tragic phenomenon, but the striving to locate the septic focus in our system is halting, uncertain and inhibited. It is here that we can make our most significant contribution.

23. If we speak of the mind, we have to understand how helpless this mind has been made by its most triumphant achievements in science and technology. The leap in knowledge during the last fifty years, the pushing back of the frontiers of the unknown, has given man a variety of incredible skills. However, the very fact of the leap has denied the opportunity to the mind of man to adjust to the change, to discipline and condition it for the general good. The dramatic advance of science and technology, so rapid as to deny the mind the time to grasp its implications and hence devise correctives, is not studied in terms of its impact on human relations and living.

24. We have got into the habit of running away with the notion that invocations about co-existence, mutual understanding and cultural exchanges are enough to build the defences of peace in the minds of men. We forget even as we mouth these phrases, that we are in practice linked to activities which are sharpening political, economic, social and cultural polarisations in our world. It is these polarisations which are increasingly a threat to ordered living in a shrinking world. Indeed the revolution of science and technology firmly possessed by the advanced nations, with its built-in leap effect, intensifies such polarisation between the developed, the developing and under-developed regions of our world. We cannot accept these trends as inevitable, for they are self-destructive. We have to evolve correctives on a world scale, even as we do within a family, a community or a nation.

25. The despair which engulfs the mind of man is all embracing. It cuts across the frontiers of affluence and poverty It cuts across power elites drawn from various classes—or at least the thinking sections of these elites The 'flower children', sprouted by the jungle of affluence, the volatile anger of the impatient in the sprawling regions of poverty, the desperate moves of the cultural revolutionaries, the revival of anarchist thought, the nihilism of the sensitive and the apathy and cynicism of the millions of educated youth are, in fact, a part of the single trend which reflects reactions against the social frame within which we have to operate. It is imperative that at this juncture in our affairs, when new science and new technology have created the clear possibility of a massive forward thrust, we begin an incisive assessment of the relevance for the future of the social frame within which we plan our life. Is it viable in the context of development? Does it belong to a past epoch? Are we guilty of living by values which are no longer valid? Crises of this kind have engulfed past civilizations Is our civilization on the edge of some such catastrophe? These questions concern both the mind of man and the quest for well-being on our planet.

26. The scientific and technological revolution, pushed in various directions by considerations far removed from the essential interests of man, except of course in such accidental conjunctions as happen to serve him, has created an unending maze from which it is difficult to escape. Unless we are able to direct this process on the basis of profound understanding, we shall find our condition becoming inevitably more complex. The first efforts to evolve models for lyiving and bebhaviour in the future, and to use these models to discipline our present actions, constitute a recognition of the need to assert our hegemony over the knowledge to which we have given birth. But the efforts remain few and far between, and suffer from the desire to preserve such norms as we are accustomed to. This is particularly true of our developing societies. For instance, the integral nature of our village community is being torn up by the surge to reach the town or to set up the small village town which reveals all the ugliness of ill-digested, borrowed ideas, bereft of either traditional values or those of a technological age. Qualitative changes demand the forging of new weapons, both intellectual and institutional. One such weapon is the making of prototypes—in all the items of man's normal use. Prototypes combining advanced technology with the traditional aesthetics of different peoples can be evolved through the cooperation of the developed and developing world, so that these prototypes complete with the synthetic tinsel of what usually goes by the name of 'modernism' in our societies. Such prototypes, mass produced and marketed, powerfully competitive will cut waste and reduce the developing gap between the advanced and less advanced. Whether in matter concerning food, political behaviour patterns, constitutional structures or social assertions—matters inextricably tied up with the all-embracing question of peace—we must now realise that the old terms of reference no longer have validity.

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27. The concrete jungle that is the modern metropolis is enthroned as the city of tomorrow. Only stray voices are heard to challenge this travesty of what a city should be—an efficient human mechanism intended to manage both the problems spawned by science and technology and to enrich man's spirit. The sum of loneliness and frustration has only been increased by modern urban development. The growth of the concrete jungles is pralleled by the grgwth of psychiatry. Man's environment is desecrated by man. He is unware of what he is doing, and has done, with himself.

28. The traffic jams of our major cities, for example, have become one of the features of urban growth. The automobile, intended to speed movement, has now become a hindrance to that movement. We merely continue to produce the material which consolidates the traffic jam. The standard has been established and then elevated to the principle of what is called 'the good life'. There is built-in anarchy in the process, but who has the courage to cry halt to this aberration—and to others too numerous to detail ?

29. The standards of living prevalent in the affluent pockets of the world are also deified. The urge for more and more of what we do not really need is axiomatic to present growth. The enormous waste involved concerns not just materials of all kinds but also involves massive, meaningless effort by men and women, an effort that sparks explosive psychological tensions and dries the springs of creativity. There is time for little else except competition at the level of ostentation.

30. Societies which claim to live by other values are no better. In socialist societies, there is a 'me tooism' not a better than, a mental state which startles the sensitive observer. Here, despite social controls, the cities rise like jungles, the traffic jams are consciously sought, and so are the wasteful standards. No genuine alternative is posed. The choice before man remains what it has always been—conform or perish. His plight is tragic for, unless the alternative is blue-printed, he cannot be otherwise motivated

31. The infection of these obsession spreads, throughout the developing world. A city such as Bombay, congeals within itself all the features to which I have referred It becomes the symbol of the future to more than five (now over six) hundred and fifty million of my people. Our planners know that to proceed along this path is madness. Yet we proceed along this path. When China rejects this path we are amused. True, the cultural revolutionaries are doomed They are trying by official fiat to skip a whole human experience in a world already shrunk, a world ringed by communication satellities which, willy-nilly, will internationalise all the values and standards prevalent in the most advanced societies today, those same self-defeating values and norms China cannot isolate herself Two hundred years ago her cultural revolution may have been a success. But not today Science and technology can no longer be defeated by slogans Other answers have to be found But the question raised by China cannot be dismissed

32 I have dwelt at length on what I consider to be the heart of the crisis. We seem to be unaware that the very processes of growth we witness today will divide our world into distinct areas—the highly advanced, the advanced and the camp followers. The millions of Asia and Africa will soon learn that within the framework of the scientific and technological revolution they cannot possibly make up the leeway of centuries—that is, unless they evolve a dramatically different alternative spell it out and campaign for it I shudder to think of the impact of this realisation upon the mind of Asia and Africa, if alternatives have not been worked out Either there will be deadening apathy, with all its accompanying aberrations or there will be explosive anger—a mix of starvation, frustration and obscurantism—spilling over frontiers and sparking responses which could lead to mass annihilation.

33. If you should feel there is exaggeration in what I say, then it is for you to explain that the processes of growth we witness now have another, different impact. There are vicious circles within vicious circles. If disease is conquered, there are more mouths to feed. Bursting populations, fed on rising expectations popularised by the mass media, demand standards for which resources are not available. Resources for significant development can only come from the surplus of the affluent. But the affluent are embarked on a course of development which rules out any surrender of resources to the less fortunate of this planet. Today man's effort is without a disciplining philosophy which conditions our thrust into the future.

34. We can no longer look upon our world as we have done in the past. Naturally, when dealing with nations, the complexities are greater, more ramified, not easily resolved or untangled. But the business of returning to fundamentals has to begin.

35. The pace is being set by those who posses wealth and power, by those who are arrogant enough to believe that the culture they have spawned is the medicine for all. In every developing land the virus has been planted through those who imitate mechanically, through patronage and sponsorship, even through innocent activities like cultural tourism. Two-thirds of mankind is being made to conform to a pattern of life which feeds alienation and which, significantly, is being rejected even by the sons and daughters of the elites of the advanced countries.

36 This is important to the dialogue we are embarked upon. The growing alienation in the industrial and technological societies— a vital factor in the crises of cultures—is now sought to be transplanted. The developing nations of Asia, Africa and Latin America, which receive this supposedly civilising touch, are now discovering that it strikes a parallel and more dangerous alienation—an alienation which polarizes the elites from their own peoples. This cultural disintegration sharpens the divisions already existing in societies which have yet to resolve the problems of inequality.

37 The intensity of this alienation-cum-polarisation in our part of the world is also fed by the revolt of youth throughout the world who reject the established norms and perspectives of man's effort to advance. Advance in the directions indicated is considered retrograde, conformist, inimical to freeing the spirit of man.

38 There is now a deep contradiction between the value systems of established societies and the future to which we aspire. It is an explosive situation. The anarchism, nihilism, frustration and anger inherent in this situaton can only be tackled by an alternative value system which has been carefully worked out, justifiable in humanistic terms, capable of providing the answers to the challenges posed by our massive entry into the era of science and technology. *We have failed to create this value system of our era.*

39. An antiquated value system cannot provide the base of human activity at this critical juncture in the lives of two-thirds of mankind who, as a result of the population explosion, demographically, have become younger. The enlightened among them realise that imitation of the rich nations invites traumatic shocks which our complex societies are unable to cushion.

40. In other words the developing nations must learn from the tribulations of the developed.

41. We cannot permit ourselves to become the protectors of a meaningless and explosive *status quo.* We must become the instruments of enlightenment. We must sketch the new perspectives before man, and make these perspectives the guidelines for all his activities. I am asking for a revolution in social thinking to match the revolution of science and technology. Such a 'confrontation'—if it can be so described—is inescapable, for although I speak of the developing world, the roots of alienation are common in both worlds.

42 How do we go about it? What is called for is the sketching of new perspectives, new priorities, new attitudes and new assessments. This is no longer a job for a single man or single men working from ivory towers. The very logic of the revolution of science and technology dictates a co-ordinated, collective effort of various specialisations for,

in today's world, a scientific or technical leap in one sphere heavily impacts human activity in general. Our failure to understand this element of the revolution which is on us blunts even the limited probes we have attempted to make. In other words, we had better stop looking for charismatic magicians and get down to the dull business of gathering result-oriented specialists to pioneer a new social structure.

43. At the time, we must become the implacable enemies of romantic do-gooders. The human condition is such that we tend to look for short-cuts to our dream-world. There are no short-cuts. We are in the midst of 'two revolutions in one'. We are relevant only to the extent to which we locate our aberrations and move in coordination, collectively, to cure them. This is why I feel that if economic theory dominated the first half of this centry, social engineering will have to play an increasingly pertinent role in the second half of this century.

44. Let me explain Scientific agriculture inevitably dictates larger holdings, giant farms for staple crops and more intensive small-scale cultivation for supplementary foods No single mechanical pattern can be imposed because of ideological dogmas. Similarly, we have to demarcate the areas in industry To encourage centralised monoliths in every branch of industrial production, on the basis of dehumanised economics which ignores the social dimensions of growth, is to invite disaster. Industrial growth must be so designed as to prevent an explosion of urbanisation as we have come to understand it. We must organise an even spread of production points, large-scale and small-scale. We *must not think in terms of cities which are concrete jungles*, but in terms of the spreading habitat. This immediately poses the question of preventing through natural processes the migration of millions from village to town In other words, we have immediately to conceive economic growth and the resulting facilities in such a way that the migration is halted. Village crafts must be equipped technologically to link to a national market and a whole sphere of activity must be reserved for them We do not want a 'do-gooder' approach but a highly scientific technical exercise. Facilities like TV should consciously be concentrated in the rural areas to 'anchor' the population Indeed, top priority must be given to bridging the gulf between village and town—and the cost must be calculated in perspective, in terms of the totality of human growth, or else the effort of decades will be drowned in the anger and frustration generated in the shanty towns we create.

45 If you accept the broad sweep of this argument, then the details inevitably follow Our people cannot rise out of mud hovels unless we create alternative building materials which possess the qualities of mud, are of greater permanence and cheap, and permit the creation of new rural habitats Tensions in towns cannot be ended unless we solve the problems of mass housing, mass transport and mass consumption on the basis of a new and aesthetic definition of living standards. Environments will be destroyed unless we find integrated approaches to the business of living. And so it goes on, this business of consciously motivating our people to skip the aberrations of affluent anarchy. The task is not easy. It cannot be ordered It can only be achieved through free choice, through better alternatives, properly *projected and marketed* Indeed, prototypes will have to be engineered and made to compete with the trash We have this yearning—and the talent—in our developing societies. We must build the dream of the future, and motivate our millions in a new design for living and development. Otherwise, we shall only be seeking patterns of growth which have been enthroned in the developed countries and which are being rejected by the enlightened of those countries.

46. I believe that the disciplines of the approach I have spelled out will mould a value system far superior to anything that the present developed societies in the West and East have thrown up. The ideologies in which we have been brought up are irrelevant in terms of the 'two revolutions in one' phrase, which I have dwelt on. Science and technology will fashion a new ideology, if you can call it that. It will have to be based on centralised planning but with a decentralised implementation system. The class structure will in the process undergo fundamental changes for the engineering of the total growth of man inevitably places power and intiative in the collective functioning of educated and trained men. In other words, the classic theory of revolution will have to be replaced by a rather complex system of action and reaction and multi-level impacts on social structures.

47. In short, we must address ourselves to a new type of society. When communication satellites ring the world, imagine the impact on behaviour patterns. When aircraft carry a thousand passengers, imagine the devastating impact on the medieval customs controls and health regulations prevalent at airports. When cities double their population imagine the impact on local administrations When science and technology dominate the planning process, imagine the impact on the 'generation gap', on the very processes of democracy What I want to say is that you cannot philosophise without a knowledge of the basic laws of science and technology This fact will become more sharply underlined in this second half of our century.

48. We in the developing countries should be more concerned with these challenges as we will be expected to cope with them at very short notice and within a very limited time. Unlike advanced countries, which are able to adjust over decades to the repercussions of the industrial revolution and, now, the revolution of science and technology, we have to cope with these problems on a kind of permanent emergency basis Politically and socially, too, we do not possess the institutional support for effective action. We must, therefore, place ourselves two steps ahead of the developing situation. You can well imagine the task ahead.

49 These are, as I stated earlier, tentative thoughts. I have gathered together some of the ideas which I have been trying to develop in the hope that we might be able to end the uncertainty which grips us. Any new thinking always encourages cynical responses. Our job is to spark new thinking Out of the turmoil of ideas something valid is bound to emerge.

50 Social anger is good—but only if it possesses social perspectives. Unfortunately, much of the anger of today is anarchistic, without perspective. It is here that we have to intervene with passion and faith, to find the perspective. Then, and then only, will meaningfu policies evolve."

I HAVE TAKEN THE LIBERTY of reproducing its main thrusts in the words I used twenty years ago Nothing happened despite a great deal of lobbying. Nothing happens now and yet I know that unless alternatives like these are planned you might as well accept the gloom and the doom. It is the choice before us, each one of us, as we view the year 2001. If we act in our collective interest, and stop the tinkering with elitist concerns, we can dissolve the developing chaos. We, at last, have the skills, the resource and the strength to dictate our fate. □

The alternative that really works

Jyoti Basu

There are two clear alternatives for all-round planned development–the one, very much with us today, which has wrought in its wake social tensions large-scale unemployment, glaring inequalities and mass rural poverty. This, says the author, could lead us only to a frustrating fu'ure. The other alteranative, which he spells out here and asserts, is very realistic and alone capable of helping us realise our dreams of 2001.

THE SOCIO-POLITICAL SCENE in our country in 2001 will depend, to a large extent, on the type of approach we choose to adopt in planning for production in major sectors, such as agriculture and industry and for major services, such as education. There can be, broadly speaking, two alternative types of approaches to planning for production and services.

In one approach, we may choose to accept the existing unequal distribution of ownership of productive assets, or even an increase in inequality in this distribution, in agriculture and industry, and have visions of production programmes on the basis of such unequal ownership distribution.

In agriculture this means that we accept that in an average village in India the top 10 per cent of rural households will own more than 50 per cent of land holdings, with remaining 90 per cent owning less than 50 per cent of holdings, of which the bottom 20 per cent being landless or marginally owning land. We may then be further forced to accept that in some situation the majority of the relatively poorer households remain dependent on the affluent landlord households for loans and, as a consequence, are forced to sell their labour at a lower wage and their produce at a lower price to the employer households.

This unequal land ownership pattern seems to have been accepted in the present state of national planning. An insignificant percentage of agricultural land at the national level has so far been redistributed to the rural poor. In the formulation of the Seventh Plan this same inaction on land reforms at the national level and acceptance of unequal ownership of land seems to have been continued.

the class interest

In such a situation, given the land ownership pattern, since the production decision is primarily taken by the rich landlord households, planning for development of production in agriculture and allied sectors will be viewed in terms of the interests of this class of households. Since this class of households have access to capital, and since they do not want to weaken their bargaining position *vis-a-vis* the agricultural labourers and other poorer households by depending on their labour, there will be an increasing adoption by the landlord households of a technology which may use, relatively speaking, more capital than labour. In fact, in the context of the Seventh Plan, this technology has tended to become not only capital-intensive but often also import-dependent. We think that the adoption of this technology, although some times glorified in terms of a reference to the 21st century, implies that there may be inadequate absorption of labour in production, resulting in unemployment and insufficient generation of internal purchasing power.

"In the formulation of the Seventh Plan this same inaction on land reforms at the national level and acceptance of unequal ownership of land seems to have been continued".

This may also explain the paradoxical situation that has recently emerged in the Indian agriculture. There has been, for instance, on the one hand, a substantial stockpiling of foodgrains, reaching, of late, a total of more than 30 million tonnes On the other hand, the agricultural production structure has failed to absorb the rural labour adequately with the result that a significant number of rural households still remain below the poverty line.

Confronted with this situation, I had strongly urged in the meeting on the Seventh Plan of the National Development Council, held in November 1985, that a significant increase in the use of this stock of foodgrains be made for both rural and urban employment programmes. There has yet to be a significant step-up in the proper utilisation of foodgrains for this purpose. Does it mean that there may be, among others, a conflict in this use of foodgains from the standpoint of interests of the landlords, since there may be an implication of an increase in the agricultural wage rate and. therefore also an increase in the bargaining position of the agricultural labour and other poorer rural households? If the stock of foodgrains is not utilised domestically in this manner, there may then be a tendency to export the foodgrains. Such an eventuality, in my judgement, will be extremely unfortunate in so far as it indicates a socially wrong choice of technology, leading to under-utilisation of working force, inadequate generation of purchasing power of people and. export of foodgrains at the cost of vast undernourished sections of the Indian people.

and the implications

This inadequacy of purchasing power of people will also impinge on the growth of industries. In addition, if the ownership of industrial capital is allowed to remain concentrated in the hands of a few—indications from the formulation of the Seventh Plan, the relaxation of control over the growth of monopoly and the statement of the Long-Term Fiscal Policy are towards the continuation and strengthening of this concentration—then the adoption of technology, for reasons similar to agriculture, will again be increasingly capital-intensive and labour-displacing. Indeed, the number of workers employed per factory in the organised industrial sector has already significantly fallen in recent years. This tendency will further result in serious industrial unemployment and inadequate generation of purchasing power, in addition to similar problems originating from the agricultural sector.

Confronted with the overall problem of insufficient purchasing power of the common people and limitation of domestic market, there may be a tendency in the industrial sector to tilt the product-mix away from the mass consumption goods for the affluent. But, since this sphere of the market is itself restricted, the eventual tendency in this industrial strategy will be to seek salvation through exports by ignoring the vast sections of domestic population. But will this strategy succeed? Indications from the data on foreign trade are that exports have not yet picked up on any significant scale. On the other hand, the technology which is being adopted in industries is so capital-intensive and import-intensive that imports will threaten to go up in a massive scale. Windfall from the finding of natural oil may temporarily suppress the secular problem of deficit in foreign trade. But the country will have to face this trade-imbalance crisis eventually. If on the advice from some quarters, foreign or domestic, the country is then forced to take loans from international agencies which, given the nature of this wrongly guided strategy, may be extremely difficult to pay back, the entire economy will face the real danger of running into an interna-

"It will be a national shame if, because of wrong choice of priorities, India has to approach the year 2001 with vast masses of population remaining illiterate or without access to even elementary school education."

tional debt-trap. This strategy, in effect, amounts to a significant deviation from the goal of self-reliance—a goal long cherished since the beginning of Indian Planning.

the goal and the deviations!

Deviation from another such long cherished goal is reflected in terms of the recent policy shifts on the role of public sector in India's planned economic development. The building up of basic industries under public sector had its beginning in the Second Five Year Plan in the 50's. The growth of these public sector industries and, in a more generalised frame, also public sector infrastructure facilities, such as irrigation, transport, etc., have in fact acted as helpful factors for some industrial and agricultural expansion in India. If an index of these public sector facilities is computed, then a close relationship is obtained between the growth of this index in a State or a region and the positive movement in value-added in the factory sector and yield of foodgrains in that State or region. While, on the basis of this experience, the policy should have been one of expanding the scope

"When attempts are made to concentrate powers in the hands of the Central Government, then the common people in the different States tend to lose the feeling of participation in the process of planning."

of public sector, of improving its efficiency by more effective involvement of workers in the management and of ensuring that the benefits of this sector can reach the common man, the policy recently adopted is in fact one of relative contraction of the scope of this sector and its employment generating potential. This relative contraction is expressed in terms of insignificance in plan outlay for the public sector industries, a more than 50 per cent share accorded to the private sector in the gross capital formation during the Seventh Plan and a package of policy measures in favour of privatisation in the economy. If this trend of privatisation continues, then the Indian economy may approach the 21st century with a more unequal ownership of industrial capital with, as mentioned earlier, implications of adoption of labour-displacing, capital-intensive technology, restriction on the scope of employment generation and limitation of the purchasing power of the people. The recent document of the Central Government on education policy appears to be related to this particular strategy of production planning.

Since, with unequal ownership pattern, the production structure is being tilted towards capital-intensive technology, the implication of this production strategy for education is a requirement of exclusive training facilities for a privileged minority to operate this technology, with a relative neglect of education for the vast masses. It is this specific orientation which seems to have expressed itself in the document on new education policy in terms of the emphasis on so-called model schools and exclusive centres of education for a privileged few and neglect, for the first time in recent years, in the specification of targets regarding universalisation of primary education relevant for the masses. It is, as already indicated earlier, fashionable these days to talk about India moving into the 21st century. But without any target specified

"We have to build a strong and united India. For this, economic base of each of the States has to be strengthened. Then only the entire India—the Centre and all the States together—can remain powerful".

for universalisation of primary education and with a hasty proposal for pace-setting schools for a few, what is our assessment of implication of this lop-sided education policy package for removal of illiteracy ? It will be a national shame if, because of wrong choice of priorities, India has to approach the year 2001 with vast masses of population remaining illiterate or without access to even elementary school education. Since this entire approach to the planning for production and services is away from the aspirations of the vast majority of common people, there is an inherent tendency in this approach to shut the democratic participation of the people out from the process of planning, and to centralise instead economic powers and powers of decision-making in the hands of the Central Government. The trends of centralisation in the overall Centre-State economic relationship is, in my opinion, an expression of this inherent tendency. Even in the document on new education policy, there is the intention of increasing centralisation in the formulation and monitoring of education policy.

When such attempts are made to concentrate powers in the hands of the Central Government, then the common people in the different States tend to lose the feeling of participation in the process of planning. When this feeling is lost and also the problem of unemployment, because of a wrong choice of strategy, is aggravated, divisive forces in the name of religious fanaticism casteism, obscurantism get encouraged, threatening the basis of unity and integrity of our country. We have to oppose all these divisive forces in unequivocal terms. We have to build a strong and united India. For this, economic base of each of the States has to be strengthened. Then only the entire India—the Centre and all the States together—can remain powerful. We want our young people to enter the 21st century by breaking down all the walls which divide common people in the name of religion, caste, etc. For this, we have to struggle to prepare the basis for a more equal

access to production structure. That takes us to move, even within the existing socio-economic constraints, towards an alternative approach to planning for production and services.

...and the alternative

Within the limitations of the existing socio-economic structure, this alternative approach begins, on the basis of the strength of democratic movements of the common people, by trying to reorder, to whatever extent possible, the existing distribution of production assets, in agriculture and industry, towards a more equal situation. This approach in agriculture, therefore, begins with redistributive land reforms—not as any exercise in charity but essentially as a productive move on the basis of hard evidence of superior production performance on the part of working peasants. These land reform measures then need to be supported by the provision of non-land inputs, such as irrigation facilities and implements, and infrastructural facilities, particularly marketing. As a result of land reforms, the decision-making in agriculture can be meaningfully viewed in terms of the poorer farmers who are endowed with labour power. It is further known that there is in rural areas often a relative abundance of untapped local resources. The socially appropriate choice of technology in this alternative approach will be necessarily modern, but in terms of superior use of labour and local resources. Such a choice of technology not only provides a better relief to the problem of unemployment, but it also creates more purchasing power for the common people. Because of this generation of purchasing power, production programme in this alternative approach is more consistent in terms of ensuring a balance between production and effective demand. Because of the generation of purchasing power, again, a basis is also prepared for expansion of industries for mass consumption goods as well as industries producing intermediate goods and machinery necessary for manufacture of mass consumption goods. Some of these industries may have their rightful place in the small-scale sector, implying a better dispersal in the ownership of capital and extension of employment opportunities. There is at the same time the need for support from the big mother industrial complexes, to be set up under social control. Extension of social control is also necessary in the field of marketing and public distribution of essential commodities.

Education policy related to this alternative production planning will place the most significant emphasis, with whatever means at disposal, to universalisation of primary education and more equal access to higher levels, rather than showing a special haste to set up the exclusive model-school type of institutions.

Such an approach to planning for production and services, because of its better identification with the aspirations of the common people, can be with confidence more democratically decentralised by involving the common people in an organised manne from the grass-roots level.

It works in West Beng

With due modesty, it may be pointed out tha attempts towards this alternative approach to plar ning, with priorities as indicated above, have bee initiated in West Bengal for the last nine years or so The common people have been involved in an orga nised manner in the formulation and implementa tion of the plan projects through the regularly elec ed Panchayats in rural areas and municipalities i urban areas. This process of plan formulation an implementation has been further decentralised an coordinated in recent years through the constitutio of the District Planning Committees at the distric level and the Block Planning Committees at the bloc level, by bringing together the elected representative of people from the Panchayats and other bodies an the concerned officials of the different departments a the respective levels. With a general guideline o broad priorities, along the lines as mentioned above plan funds for the district-level and the block-leve schemes of all the departments are devolved dow

"Needless to say that there are entrenched interes in our society who will stand in the way of emergenc of this alterantive socio-economic scene in the yea 2001. It is on the basis of organised democratic strug gles of the common people that these obstacles wi be overcome".

to the district and the block levels. Schemes fo each sector are then formulated in a co-ordinate manner from the grass-roots level, first at the level o the Block Planning Committee, and then these Bloc Plans are properly integrated into the District Pla by the District Planning Committee. Such co-ord nated and comprehensive District Plans, with suppor ing plans for each block, have been formulated fo each district of the State beginning from the last yea and are now in the process of being implemented.

When attempts are made towards this alternativ approach to planning with priorities identified i terms of the aspirations of the common people, wit funds appropriately devolved from the Centre dow to lower levels and with involvement of the peop in the process of planning, then only the masse across the country can get a sense of participation i the entire process of development. It is again onl then that the walls of division among the peop can be pulled down and that the youths of toda can grow up to enter the 21st century with an obje tive sense of national unity and integration.

Needless to say that there are entrenched interes in our society who will stand in the way of eme gence of this alternative socio-economic scene in th year 2001. It is on the basis of organised democra tic struggles of the common people that the obstacles will be overcome. ■

Answer No. 1, Answer No. 2 and Answer No. 3

Vasantha Surya

What will Indian society be like on August 15, 2001 ? What will be the state of our social organisations, our political institutions, our "bonding" mechanisms, through which we express our collective will ? And what about the culture behind these mechanisms ?

TO SEND ONE'S MIND SOARING to the 21st century (or even to tomorrow) in search of answers to these questions is rather like flying a paper plane to the moon. Even if the paper from which the plane is fashioned is scrawled over with statistics, calculations and projections, its flight is not going to take it very far. Such are the uncertainties of soothsaying in any age—even now, when it is called futurology. and raised to the level of social science. A futurological prediction, weighed down with its "ifs" and "buts", its conditional clauses and variables, is launched with anxiety—and how silly it looks when it crumples in the wind and flops on the ground ! In contrast, an old-fashiend prophecy, delivered with breathtaking faith, is grand even in failure.

Undeterred by this thought of the limitation of modern scientific method, the mind insists on asking the question : What will we be like in 2001 ? When the century turns its back, what will Indian society have turned into ? Will there be a transformation ?

ANSWER NUMBER ONE . crashes into the consciousness with the force of an ICBM : There may not be an India in 2001. In fact there may not be a world at all, given the logic of the arms race.

The mind, of course, survives this unpleasant answer, as it has so many doomsday predictions (even those which have come true). Mynah-like, confined in its time-cage, it sings out the same question : "What will we be like in 2001?"

ANSWER NUMBER TWO : An *avataar* might turn up and destroy the twin *rakshasas* of poverty and instability, and Indian society will miraculously become more participative, as well as more prosperous.

A little reluctantly the mind turns back from this fantasy and asks once more, wistfully : "What are we going to be like in 2001 ?"

ANSWER NUMBER THREE : Not very different from what we are today. 2001 will bear a close family resemblance to 1986.

This might seem an unexciting prospect, but that is because we have not perceived the full potential of the events and trends of the present. 2001 is already here, in embryo, and its needs are inseparable from those of its matrix, the present. If our present socio-political tangles and knots are not transformed into a network of viable systems (to use the tempting jargon of management), 2001 might be delivered with its umbilical cord around its neck.

The transformation depends on the perception, and we have a reasonable chance of disproving what Gunnar Myrdal has said : that chaos does not organise itself into a cosmos.

But first, the preception (an inescapable experience for more and more people of all classes in this country) : Our institutions are all of them in deep trouble. Their bonding mechanisms are either squeezing them to death, or falling slack and letting them "go". And the breath of culture that animates them is beginning to reek of values quite different from those that gave life to the freedom movement.

Many illustrations may be given of this stress|slack effect on institutions. Take two social institutions, religion and family, both of which are palpable presences in the lives of most Indians.

The English word "religion", as I discovered with surprise fairly recently, has nothing to do with supernatural forces, but is derived from the Latin root, *religare* which means to bind again, to connect again. to connect again man with the universe, people with other people...*Dharma* comes from a Sanskrit root that means to bear, to sustain, to hold up. Today we experience the phenomenon of fundamentalism in structures and doctrines (the stress factor), together with the simultaneous neglect of unifying values (the slack factor). They are shattering the culture of pluralism in this country, and pushing the bottom out of the Indian psyche.

Similarly, despite the cosy belief in the Indian family's indestructibility, which is celebrated in tear-jerker films and TV serials, there are signs that all is not well in the average Indian "Khandaan". It is being frayed by poverty and ripped apart by disparities.

Nothing illustrates this process more than the phenomenon of child labour. After all, there is just so much that a child can take —and quite often in India it is the child that supports the family and not the other way about. "Hum Log" are having to send their children to work—and not just in the fields, as before. In 1986 Indian children between five and fifteen years of age trample broken glass in the Faridabad glass-blowing factories, make Divali fireworks out of deadly chemicals in Sivakasi, peel wattle bark with sharp knives in Kodaikanal, make banians and underwear in hosiery sweat-shops, crawl under Ambassadors and Marutis, roll beedies in TB-ridden shanties, do domestic dirty work in middle-class household....In 2001 these children, deprived of their biological requirement of proper nurture and security, will be adults. A soberin thought.

As for political institutions, the present level of participative democracy does not reflect growing political aspirations. Mere opportunities for lobbying and bargaining cannot endlessly take the place of consensus based on debate, and issues have to be faced some time. Policies in 1986 are often the result of opportunist impulses or panic reactions, and populist sops are used to squelch dissent here and there, while people's actual needs are neglected. Governmental structures seem to be shrinking and bloating alternately, and the political philosophy that is most in evidence is the rationalisation of repression and|or appeasement.

Social and political splintering is obvious when we look at one of the characteristic phenomena of the present : the dispersal of population. It is not just unidirectional rural-urban migration, but a constant swirling back and forth. More than the "pull" of industry, it is the "push" of agrarian distress that drives people out of their homes. In rural India the top 10 per cent of the population continues to hold 50 per cent of the assets, and about 40 per cent of the population lives below the poverty line. Today people do not stay where they are to starve, they move out, return when they can, disperse once more.

Some of them become part of the comparatively structured movement towards large scale concentrations of capital and industry, others drift in response to the availability of temporary work in the cities, towns, and agricultural production centres. This floating population provides the surplus margin for industry and the cheap services for urban populations, and of course the seasonal labour requirement for agricultural operations.

Dr. K. Nagaraj of the Madras Institute of Development Studies who has studied migration in the dry tracts in the four southern states says, the unstable nature of migration is such that "towns and villages come and go. They are there in one Census, and disappear before the next". In cities squatter settlements appear and vanish as if by magic, obeying the "magic wands" of slum lords and their political bosses.

The millions of inhabitants of these villages and towns and city squatter settlements lead a near-nomadic existence, hardly conducive to the existence of stable institutions. And when they try to lead a settled life, having secured a precarious foothold on the system, they face eviction. The recent demolition of Bombay slums shows that rural-urban migration is reaching its logical conclusion. The cities cannot take any more, and the erstwhile villager, dispossessed from his rural home, and now pronounced guilty of encroachment, is just not the same person. His family has split up or loosened, and his group identities have become meaningless, except for the purpose of asserting themselves as lobbies or vote-banks.

Among this restless mass of people reactions are flaring, spreading throughout society. Some of the more identifiable reactions to be seen in every class and group today are social crimes like corruption, communal terrorism based on a retreat to fundamentalism and unreason, and the curious psychological condition known as anomie.

Anomie is the sullen apathy and potential violence of the "I don't care !" attitude. It is to be distinguished from the fatalism of an earlier time, on which has been blamed the "backwardness" of our civilisation—the alleged indifference of Indians to political issues. ("Does it matter whether Rama rules or Ravana?" is a common Tamil proverb.) Both attitudes can be traced to a feeling of powerlessness, but anomie reflects acute mental conflict, set off by an awareness of issues as well as a perverse urge to deny this awareness, and to retreat into what the psychologists call alienation, or anti-social behaviour. The so-called "eve-teaser", the dope peddlar, the food adulterator, the goonda are extreme examples, but anomie is also visible in any other ordinary people like the underpaid and undervalued teacher whose cynicism can destroy his pupils' will to learn, or the dowry-demanding, aggressive mother-in-law.

The anomie of those in authority expresses itself in countless acts of police brutality, bureaucratic callousness, and political chicanery. The policy-makers reveal it by a worldly-wise pragmatism, an apparently value-free acceptance of imbalances as "socio-economic realities". To take one example, the abandonment of the constitutional commitment to free universal primary education, and the "realistic" but obviously inegalitarian division of education into non-formal systems (or just plain non-systems?) for some, and Model Schools for others. The recent Bills on the regularisation of child labour and on the limiting of divorced Muslim women's right to maintenance are further examples of the new socio-political "realism".

To most of us this phase of 1986, this anomie, is a daily experience. We encounter it at our place of work, in the market place, even in our homes, and sometimes we see how anomie blocks the growth of individuals and institutions.

Sometimes we combat it with some kind of positive collective action. This kind of action has in fact become part of the lives of millions of people, organising themselves around specific issues. With the awareness that our institutions are in deep trouble, has also come the energy with which to build new bonding mechanisms, to generate a new culture. These efforts by Indians all over the country may not look like very much today, and they do not fit very easily into any conceptual framework as yet. It is out of them, however, that ideas and agents for the transformation of Indian society will come together.

...Suppressing my urge to shout, "In 2001 the have-nots of our society will coalesce and take a deadly swipe at the haves! ", I muffle my prediction, like a respectable modern futurologist, with two *ifs* : Indian society in 2001 will be closer to transformation than it is now, if Answer Number One, global annihilation, does not come to pass, and if Answer Number Two, our habit of succumbing to dazzling escapist fantasy, does not in the meantime strike us blind. □

(*Continued from page* 41)

appropriate adaptation to the call of the times. As far as physical, economic and social side is concerned, we have little to learn now from the West. But we have a lot to imbibe both from Japan as well as China with *acupuncture* to our own geography and ecology.

to face "the call" !

The basic call of the hour is, "man-making". "It is the quality of the human being that makes a nation great", was what Nehru never missed proclaiming. The strides in all fields of endeavour since 1947—science, technology and institutions dealing with the enormous diversity that India is, had their genesis in this lone man. The author, an erstwhile engineer by profession once, wishes to lay the highest emphasis with all his passion yet unburnt on "human engineering", as a change to work for, by the current leaders of India. The physical sciences including electronics and button pushing, have developed a momentum of their own. They will yield a quantum jump almost self-propelling across the world. But this should not work like the saw in the hand of a monkey working backwards on the tall branch of the tree on which he was seated. Is the quality jump in "man-making" now unavailing, still feasible ?

We come to the end of question posed by the Chief Editor over "August 15, 2001". Will "Man-making" supervene on the date proposed by him? Or it will be man acting the dazzled monkey's role? A prophet or a Delphic oracle alone could perhaps be looked up to, for prognosis. But prophets arise as rare phenomena in history. Astrologers play the delphic oracles that thrive today round the world. But a thinking mind is repelled and revolted by them. A great leader of thought, about a century back, had described man as "an infinitesimal in the heart of a nothingness, yet not nothing". Sands of time are running too fast for a renaissance to cut across the centuries by-past. The chances are balanced. The road is open. It depends on the wind that can be set in motion.

Will there be a reaction to a reaction, waking up man from the spells of magic, burlesque and parodies in the name of politics, to life's ultimate peril? Only one thought never ceases to trouble. If the epitome of life were to be "Destination man" should the road lead via the moon and further beyond in space? With deep apology to the Chief Editor, friends and readers alike, I confess, I dare not predict whither the wind.

2001 and all that !

K. A. Abbas

THE MORNING OF JANUARY 1, 2001, was not misty and foggy, unlike the New Year eves for years. The MIST had been cleared in the CAPITAL as it constituted airplane hazards— as motor car traffic hazards

It was achieved by the Ministry of Human Resources under the "DE-FOGGING DELHI" project, of several dozens of artificial SUNS installed on lofty stands which were installed by big advertising companies which covered the computerised pylons, with their advertisements.

At 8 a.m. when the Artificial Suns had dispelled the fog and cleared the airport runways I got out of the plane and found myself in the airport which was circular, six platforms spread out like a six-fingered hand. The plane had touched the Aeroplane Platform No. 3, and our baggage was already put on a slowly revolving ramp which was at the end of the computerised and electrically-operated escalator.

Picking up my bag, I emerged out of the airport. I could not afford to take a seat in a helicopter which cost Rs. 500 per seat to Cannaught Place, so I took a MARUTI two-seater MINI-taxi which ran at a specially-reduced rate of Rs 5 per kilometer for the Janpath *Vishram-griha* where as, at Mumbai airport, I had booked a small room at Rs. 450 for 24 hours. As I was seated in the taxi and tried to take a snooze I heard the *Khat-Khat-clatter-clatter* of the several helicopters which had started with my taxi but were, one by one, overtaking it ! Soon they were far away but the illuminated portrait of the Prime Minister was now talking, with a wooden clapper to provide an applause.

"BE GOOD—THE P M. IS WATCHING YOU" was the illuminated sign above each of his portraits studded along the road.

I looked at the portrait—the head was not shown, the receding hair-line had receded beyond the permissible limits. So, the new portraits were always but at the middle of the forehead

"GREETINGS TO THE 21ST CENTURY" was the theme of the P.M 's telecast speech which was on the NATIONAL hookup, and could be seen in all important towns and cities.

The telecast ended and began with the slogan—"BE GOOD ! THE P.M. IS WATCHING YOU !"

When I arrived at the hotel, my computerised booking had been done and the computer had allocated Room 166 to me. But the key was not computerised, though the lock was, and so for half an hour the key could not open it !

"Where is the master-key with which hotel managers can open any room of their choice ?" I was told the computer had swallowed it, and it will take time to get it out of the mechanized interior. It will be simpler to try other conventional methods like for a steward to enter through the bath-room window; which he did by smashing the glass panel which broke with the loud sound, the air-conditioned, compressed air inside escaping with a hissing sound. After the fresh air was pumped in, I was allowed to occupy my room.

I looked around. It was a luxuriously-furnished room with a wall-to-wall carpet and ceiling-to-floor draperies all round, which had such things as bath-room doors, windows, cabinets and lockers. But there was difficulty to decide which was where, and I spent one hour to find the bath-room door which had computerised towels, computerised faucets, and a computerised shower and a computerised SOAP which, after it had soaped my back, something clicked inside, and its metallic arm tried to put the SOAP inside my mouth !

The computerised towels were, however, very efficient, they massaged my back and legs, drying them wonderfully, and I had to say, "Thank you, Computer"; I was aghast when the voice came through the loudspeaker, "You are welcome". But it did not stop there, but went on. "You can shove it up....". I switched it off before it got any further with its obscenities.

I was lucky in finding the T.V., and put in rupee coin in the slot to hear the news.

"Welcome to Dilli Doordarshan" ! it said, "The day's news.. "

The T.V. announcer, a prettily-coiffured young lady appeared on the screen, flaunting a sari draped in Ajantaesque manner which was selected by computer after a computerised opinion poll held in Washington, Moscow, London, Paris and Beijing, after the Festival of India was finished, and the Costumes of India had been displayed exhaustively. (I remembered that the Air Hostesses were also sporting Ajantaesque dresses with their Ajanta smiles !)

"The P.M. will now speak on 'the 21st Century'."

Fade-in to the P.M.'s House which looked like a fortress where the camera charged through 320 security guards in front and came to rest on the much beloved face which was well-protected in a bullet-proof glass-helmet, and who had 320 of his sten-gun holding Security Guards at his back. He was saying, "Welcome to 21st century in which we are the very FIRST to arrive. If we wanted, we could monopolize it and colonize it, like some of the Colonizer Western Powers. But we are NOT them. Therefore, we say welcome to ALL in this 21st century which we firmly believe, will be CENTURY of PEACE AND GOODWILL !"

Then the Band struck the familiar NATIONAL ANTHEM and the P.M. was seen rising in his seat and since the T.V. worked both ways, I was also expected to get up. So, I suppose, was every T.V. viewer ! Except those who wanted to be known as ANTI-NATIONAL elements !

The next news item on the T.V. screen was the TELEVISION TIMES. It consisted of the close-up of news items in a daily, duly read out with CAMBRIDGE accent by a duo of news-readers—— one man and another woman to establish DEMOCRACY of sexes.

Then came, though a new innovation, a juxte position of amazing shots, contributed by a series of T.V. stringers who would pick up any NEWS and file it, which would be in a queue. It would take time, but they could be sure it would reach the small screen.

The first was a shot of a village in Saurashtra. The land was parched dry, the cattle were listlessly roaming over the land. Then came a C.U. of a water-pump and a solitary drop of water escaped from its nozzle. This was proclaimed to have been produced by Gujarat Federation of Milk Co-operatives, the manufacturers of AMUL BUTTER.

The very next was a procession of hungry and starving people, with caved-in stomachs, children with bloated stomachs, filled with gas and gastritis. It was a silent procession but people held placards reading "GIVE US OUR RICE" ? "FILL OUR EMPTY STOMACHS BEFORE OVER-FILLING YOURS" ...."GIVE US SOMETHING TO EAT, OR GIVE US POISON", and so on

Then came a headline. "PUNJABS TWENTYFIVE YEAR WAR TO CELEBRATE SILVER JUBILEE". It was followed by a close-up of 3 terrorists with pemaded hair and pointed moustaches looking like scorpion-fangs, readying their 303 rifles. Then the cameraman adroitly panned to their three victims who had failed and were dying. . On their dying moments there was the noise of a motorcycle starting. And then he cut it to show the motor-cycle becoming smaller and smaller——till it had disappeared from view. This programme was announced to be produced by RAJMAHAL group of 5 STAR hotels.

To me, it appeared to be a scene from a 20th centutury film which I had already seen but now the technique had improved and everything was shown in detail. But the continuity was the same !

From there the T.V. screen showed the scenes were shifted to Eastern India :

In Assam, the minority problem was as acute as ever. he Hill tribes were dancing their picturesque dances, but the viewers were watching them, openly holding their rifles. It was also an old, old story.

The Bengali *bhadralok* were still there, but now they had turned Naxalities and spoke with their guns in the 21st century.

All this was gruesome enough. So, to change the taste of the viewers, they replayed the last night's performance of the "21st Century Dance" as it was the prime attraction at Ashok (or Ashoka ?) *Vishram Grihas.*

Pramila Padamsee, vivacious daughter of Alaque Padamsee and Sharon Prabhakar, danced to revive the memory of the dances of her aged mother, now in her fifties ! Her partner was Babla Shankar, grand-son of the great UDAY SHANKER. They danced "The Dance of the 21st Century", which was a combination of the Punjabi *Bhangras,* the Maharashtrian *Tamasha* with costumes borrowed from Bharat Natyam, and masks from the tribal of Assam, and Kathakali of Kerala. It was supposed to be the essence of National Integration, but the fun was spoiled by a T.V. report of a Bengali-Malayalees riot over a football match in Trivandrum.

I took the opportunity to visit the Trans-Jamuna slum colonies which were also lit up to greet the 21st century as they hoped that the change of the century would save them from hunger and want. There was an ancient (at least 2 decades old) sign-board which promised to provide them Schools, houses, water-taps, children's playgrounds, hospitals, latrines, and sanitation, and picked up in neonlights in capital letters was a simple statement : "WE HAVE BEEN WAITING THERE FROM 1971 to 2001".

I returned to my hotel where a 21st Century Special Dinner had been promised, but when I noted its price——Rs. 500——my appetite vanished.

I took the late evening flight to Bombay.

I sat down in the plane which was imported from U.S.A.

The air hostess greated me with a 21st century smile and laid before me the 21st century Special Dinner which consisted of pea-pulao, curried chicken, *aaloo ka paratha,* and *gajar ka halva.*

"What is so special about it ?" I asked the hostess. "The Price !" and she laid the bill for Rs. 100.

"From when have Airlines started charging for their refreshments?"

"From today. Don't you know this is the 21st Century?"

I could not push the dinner down my throat.

There was no announcement about arrival in Bombay.

On enquiry, I was told the computer which made the announcement had decided to go on strike.

"Do computers also go on strike ?"

"After all they are doing a full-sized MAN's job".

When the plane landed, I made a bee-line for the luggage ramp.

The luggage had not yet arrived. The "Computerised Robot" which handled all the luggage, was on sympathetic strike, along with the one who made the announcements.

So all of us had to trudge back to the plane to pick up our luggage.

Mini taxis were not passed by R.T.O., Bombay. So I took a scooter at Rs. 6 per kilometer.

After I had reached home, I paid him by the Meter., but he extended his palm. *"Bakhsheesh,* saheb !"

"Bakhsheesh for what ?"

He answered back, "For the 21st century".

"Where is the damned 21st century?"

"There. . . .", he pointed to the sky where it was picked up electrically in letters of Neon-light——

"WE ARE IN 21ST CENTURY. BE GOOD. THE P.M. IS WATCHING YOU."

I looked from the sky down, along a tree at the bottom of which a scrawny begger was shivering in the cold of 21st century.

"Brother, do you know it is the 21st century ?" I asked him.

"I don't know it and I don't care what day or night of which century it is", he replied, "Will you give me two rupees ? Then I can get a hot cup of tea to warm my old bones which are as cold as ever, whatever century it might be".

Do this, this, this and also this!

Jamal Kidwai

A really bright 2001 beckons to us but on one condition! That we have in our midst, says Jamal, political 'a fighting alliance of secular and socialist parties into power' which, to begin with, bans all religious and communal parties from our political life; moves from identification with all religions to a position of equidistance from all religions-where Ministers are no longer seen in mosques, t mples, churches and gurudwaras patronising the faithfuls. And, then, it just works to do this... this... and all this.

THIS SCENARIO OF INDIA IN 2001 A.D. is based on the hope that India during the remaining years of this century would overcome the perils that beset it; that religious fundamentalisms now surging out of temples, mosques, Gurudwaras, Muths, Maktabs ond Shakas would fail to subvert the secular state; that rampant regionalisms would fail to break the unity of India; that Indian capitalism gunning for privatisation of the public sector would fail to capture the commanding heights of the economy; that its neo-colonialist allies from abroad would fail to undermine the precarious structure of Indian socialism and India's technological self-reliance; that combinations of landowning Kulaks, politicians and local officials would fail to defeat land reforms and land redistribution, that Hindu caste terrorism would fail to crush the upsurge of the Harijans for social justice and human dignity; that male chauvinism sanctified by all Indian religions would fail to roll back the rising tide of India's oppressed and humiliated womanhood for equal rights with men; that the people of India fed up with communalism, regionalism and reaction would rise massively and vote a fighting alliance of secular and socialist parties into power in the last quinquennium of this century; that above all there is no nuclear war which would be the annihilation of us all with all our good and bad causes. How this denouement would come about involves a long political thesis which is beyond the scope of this article.

the most crucial task

The first step of the Government would be to ban all religious and communal parties from the political

arena and disqualify them for the elections. Individuals or groups will have the right to go to Court and demand that a party using religion or cultural activities as a camouflage for political objectives be outlawed.

Simultaneously, the Indian Government would move from identification with all religions to a position of equidistance from all religions, their rituals and ceremonies. No longer will ministers be seen in

"Religious instruction identified with any religion would be forbidden in state and state-supported schools. Instead, the educational system will prescribe primers for the schools teaching the fundamental truths of human equality and brotherhood."

mosques, temples and Gurudwaras patronising the rituals or ceremonies of the faithful. No more will coconuts be broken at the launching of ships or aircrafts or religious scriptures read at the inaugurals of secular institutions or science laboratories. All state ceremonials will be strictly secular and free from the ritual of any religious denomination.

Religious instruction identified with any religion would be forbidden in state and state-supported schools. Instead, the educational system will prescribe primers for the schools teaching the fundamental truths of human equality, brotherhood, social and economic ethics, and the unity of India, responsibilities of Indian and world citizenship.

state autonomy, but .. !

The Central Government would respect regional and state autonomies to the extent that they do not transgress the unity and integrity of India. Indeed it would move further towards demassification and decentralisation of the political and administrative structure of the country. It would respond to demands for regional autonomies from within the bigger states constituting the Indian Union. Uttar Pradesh and Bihar already unmanageable would be in for subdivision into smaller regional states based on linguistic, cultural and economic homogeneity. So would Andhra, Karnataka and Kerala. India would be a land of many minorities and not a single majority based on the Hindi belt of Northern India. Smaller state units would ensure much closer people's participation in Government and economic prosperity which Haryana, Himachal and residual Punjab gained from the break-up of greater Punjab.

The Central Government would be respectful of these autonomies and generously devote national resources for the promotion of their economies, languages and culture. But they would demand in turn faithful adherence to the unity and integrity of India and would be quick to combat separatism or irredentism. Governors will have the special responsibility to safeguard against such development. A constitutional amendment would vest them with these special responsibilities like the special responsibilities given to Governors under the Government of India Act of 1935. The ultimate safeguard for Indian unity and integrity would be an All India Civil Service manning the upper cadres in each state and the Indian Army. Both civil and military personnel would be fully indoctrinated into the concepts of Indian unity and integrity as part of their service training.

no personal laws

There would be a common civil code into which the equality of the sexes has been fully built in. It would regulate marriage, marital rights, divorce, separation and inheritance rights of all communities in the country. The personal laws of any community sanctified by religion or custom would not be allowed to override the civil code. The various religious communities would be free to supplement marriage registration with their own nuptial ceremonies but in the eyes of law only registration according to the civil code would be valid. In a society in which both men and women are working, often together, love will cease to be an entirely romantic concept, the stuff poetry is made of; or the emotional superstructure of sexual attraction. Many other bonds forged in the act of working together in offices, factory or the field such as companionship, mutuality of interests, productive partnership would govern relationships leading to marriage. Such marriages would be more stable than romantic love marriages or marriages arranged between families. Inter-communal, intercaste and inter-regional marriages will be common. Divorce would not require sordid proofs of unfaithfulness. In case of both separation and divorce, the mother as the real producer of the child would have the prior rights of custody of children unless she surrenders that right or is proven in the court to be unfit for such custody. Equality of the sexes would cut both ways in post-divorce settlements. In such settlements a woman's unpaid service as a housewife in building up the joint property will be computed for a share in the husband's property.

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Equally, where the woman is the dominant economic partner, the law would require a fair settlement for a sick, incapacitated or needy husband. Men and

women will have the freedom to live together outside marriage and children of such informal unions would be recognized by the law as legitimate and entitled to inheritance from both partners. There will be a vast spread of family planning clinics in the country. Practices of contraception would be common and widely accepted. Besides promoting child limitation known-how, these clinics would widely dissentinate knowledge of child care and child development.

new economic thrust

Modern technology switching from large scale electromechanical processes to small scale electronic processes would be able to move many productive activities from large scale factories in cities to villages and small towns. Simultaneously, the development of alternative sources of energy from photovoltaic solar cells, windmills and biogas plants would promote migration of industry from cities to rural areas. A large part of industry would adopt the pattern of cottage craft production where a family with its children and friends is making either final products or supplying components for final assembly in bigger plants in the cities. Similarly, with the rapid development of transport and communication facilities by bus, commuter trains, telephone or telex, would lead to decentralization of work in large populous offices. Much work such as accounting, copying, printing and despatching would be farmed out to workers in their homes where small computers or computer terminals, word processors, small printing machines would be available to them. The city with its technologies and its employment potential will come to the doorstep of small towns and vilages. The present inexorable trend towards urbanisation by massive migration to the big cities, would be checked with its attendant evils of crime, disorder, vagrancy bred in city slums and shanty towns.

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This would have wholesome social consequences. The breakup of family life resulting from urban immigration would be checked. Men and women working together at home in cottage scale production will have more stable and integrated relationships. Children would be much better cared for. Their training in productive skills of the family would start in the home itself. This would be supplemented either by attendance in the neighbourhood school or by education through radio, television, the audio or video cassettes. They will be harnessed to productive work at an early age cutting short the wasteful period of their adolescence.

education, this way

The educational system which has been created in the image of giant factories and plants would be similarly demassified. Universities and colleges would cease to be the large factories churning out sub-standard graduates. Admissions to them would be in smaller and more manageable numbers and would be rigorous and competitive. To the rest of the student population desisting higher education, opportunity would be provided by the distance education system of open universities. There will be at least one open university in each state which would provide a variety of academic and technical instruction by radio and television broadcasts backed up by correspondence course lessons in the written word. There will be a network of tutorial centres where students enrolled in the open universities can supplement broadcast lessons with face to face tutorial instruction. There will be video and sound cassette recorders at these centres and a library of cassettes so that students can replay the broadcast lessons. For enrichment, these electronic libraries would also provide foreign cassettes on chosen courses.

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Primary and secondary education facilities up to middle level would be universally available but not compulsory as homes too will become industrial production units on a cottage scale imparting various skills to their own children. There will be higher secondary schools serving small groups of nearby villages. The main thrust of instruction in those schools would be scientific and technical. There would be one open school in each district to supplement the facilities for higher secondary education and using the electronic media to reach out to students who have not had the opportunity to enroll into regular schools.

no mercy to the corrupt

The Government will move ruthlessly to stamp out widespread sloth and delinquency and corruption among university and college teachers. This would be done by ending the present security and lack of accountability of the academic profession. Their hiring and firing system would be very different and much more flexible than that of the civil services. Teachers

hired on probation would be brought on the established cadre after a review of their teaching performance and research output at the end of five years. Habitual absenteeism from lectures, corruption and favouritism in examination would be severely punished. Academic inbreeding in the universities and colleges would be severely discouraged. Promotion will not be according to length of service or the propulsions of seniority but by open market selection in which a teacher's contribution to research and his pedagogic abilities would be rigorously tested. The

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same rigours would be applied to recruitment and promotion of school teachers.

Both the Government and the people of India having supped full with cultural chauvinism would shed their inhibition towards the English language. There would be a more whole-hearted recognition of the fact that the English language is one of the languages of India, is the cementing language of Indian unity and, the main language of higher learning. Its position as the second language of the country would remain but, in fact, it would be the first language . There would be no move to displace Hindi from its position of first language but, it would not be forced on the southern states and its universal acceptance in India would depend upon its resources of knowledge in the natural and social sciences and its willingness to absorb influences from other languages of the country. The relentless spread of privately financed English medium schools even to small district towns continue to be a lucrative business and Government would be forced to absorb them into the mainstream of Indian education.

Majority malice and prejudice against Urdu in the Hindi belt would have spent itself out along with communalism and cultural chauvinism. It would get to be more whole-heatedly accepted as another stream of Hindi and recognized as the second official lanuage and an optional medium of education in the Hindi speaking states. Hindi and Urdu would move closer to each other as the spoken language and the language of broadcasting

no more this ghettos

Government would encourage and support minority education. But they would not allow minority schools and colleges to become ghettos of Indian education. As a condition for their financial support Government would insist that they should have mixed teaching staff of the same quality as the mainstream colleges and schools and there should be a substantial percentage of students belonging to other communities on their rolls. The aim would be to ensure that instruction in these institutions is of the same quality as in mainstream education and minority students acquire the habits of living together and working side by side with students of other communities.

The Government through a series of mixed committees of Indian and foreign scientists will make a thorough appraisal of the country's gains from its large investments in scientific and technological research and the relevance of research pursuits to India's industrial and technolgical priorities. Unproductive research laboratories and institutes would be in the dog house. Research would be made more rigorously mission-oriented and made more cost-effective. Accountability of research performance would be more demanding of results. Promotions by routine and fraudulent five yearly review of performance which are in fact promotions by seniority would be stopped. They would be replaced by merit promotions by expert committees or open market recruitment.

When technology in any area of industry is imported from abroad teams of the concerned laboratory scientists and Engineers would be associated with planning and execution of the projects. Simultaneously they would proceed to copy, adopt and improve on that technology so that its import is not repetitive. They would also have the duty of assessing environmental repercussions and health hazards of that technology.

just hire and fire

Government will move decisively to stamp out corruption, inefficiency and delinquency in the civil

"Government will move decisively to stamp out corruption, inefficiency and deliquency in the civil services by dismissals and premature retirements. Appeals against such decisions will lie before administrative courts whose procedures would be simpler."

services by dismissals and premature retirements. Appeals against such decisions will lie before administrative courts whose procedures would be simpler than those of the law courts and disposals much quicker. White collar trade unionism would not be allowed to interfere with this cleansing drive. Promotions by the blind propulsions of seniority will be stopped. They will be substituted by a system of promotion through competitive examinations up to the middle rungs of the civil service and rigorous evaluations by expert boards at higher levels.

In public sector industry the hiring and firing practices of private industry will prevail. Wages and salaries in the public sector will be competitive with the private sector. The disparity between them will be reduced both by suitable increases in public sector salaries and wages and imposition of upper ceilings on private sector salaries and wages. Accountability of public sector performance will be strict and demanding. Deterrents to losses in public sector units will range from sacking of management boards to closure of the enterprises themselves. Public sector enterprises will cease to be a drain on public revenues. Instead they will contribute a rising share to public revenues. There would be rapid expansion of social services. Housing loan schemes would enable earning citizens to acquire houses when still young. The bulk of government investment on housing for Government employees would be diverted to these loan schems. Pensions would be more realistically linked to cost of living. Contributory pension schemes will be extended to cover the whole nation including farmers and agricultural workers. Similarly health insurance schemes financed from deductions at source from wages and salaries in the organized sector and contributions from self-employed workers and agricultural farmers collected along with rent and taxes. Private practice by doctors would be forbidden. All doctors will be part of the national health services but their salary scales will be generously linked to expanding resources of the national health insurance funds. The output of medical graduates and paramedical personnel will be enormously augmented to man the national health services.

better use of airtime

Broadcasting would be cementing Indian unity by satellite transmissions. But it would at the same time come closer to cultural and developmental needs of the people by setting up a network of local television and radio stations in small district towns or rural centres. These would be using local talent to produce programmes of local interest and catering to local needs. Consortia of development ministries at the centre would finance and run them. A great deal of their airtime would be devoted to educational and developmental problems treated with a judicious mix of entertainment, information and instruction. Local language or dailect would be the vehicle of communication from these stations which would strive to stimulate cultural life of the community through programmes of local folk music and the performing arts.

There would be a rapid proliferation of colleges and schools teaching communications as part of their normal curricula. All over the country groups of youngmen would be playing with half-inch television cameras and cassettes recorders, making radio and television programmes and contributing them to local radio stations very much in the way they would contribute articles to newspapers or magazines. These local broadcasting stations would have a wide variety of outside creative talent to choose from.

It would be recognised that the educational and developmental tasks of the electronic media in the country remain unfinished and consumerism promoted by commercial advertising is an uncalled for diversion from these tasks. Commercial advertising would therefore be stopped on radio and television.

With the development of small compact offset printing presses, the same demassification will take place in the newspaper industry. There will be small newspaper galore published from the district towns or large villages catering to informational or entertainment needs of the rural areas.

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Social pattern

We may remain the same in 2001 unless...

Nirmal Mukarji

Government in 2001 may not be very different from what it is today unless, as the author says, certain drastic steps are taken now. These, according to him, include primacy to eradication of poverty of the people as well as poor regions; integration of high tech with Government machinery, computerising land records; reorganisation of overgrown states and districts; decentralisation of political and economic powers, both of the Union Government and the States; enactment of a common civil code; reforming the electoral process to reduce the role of money power; and appointing effective watch-dog institutions like Lokpal.

DESPITE ALL THE BRAVE TALK about the 21st century, there is a lurking feeling that government in 2001 may not be very different to what it is today. After all 2001 is only fifteen brief years away and these may pass as swiftly and changelessly, so far as the governmental process is concerned, as the past fifteen years have or, for that matter, the past three decades. Systemic intertia may, it is feared, see to it that things remain much the same.

What should we be doing today that will ensure that things do change, and change in a desirable direction ? what, in other words, should be the agenda for government in 2001 ?

the change 'desirable'

The keyword in this is 'desirable', for change which may seem eminently desirable to some may appear just the opposite to others. Contrasting perceptions about desirable futures stem from conflicting group interests. For the elite classes the country's future must be one which preserves and strengthens their entrenched position. For the masses (the other India) this kind of future is anything but desirable, for they would surely like to see a disappearance of the elite-masses duality or at least some levelling of vertical disparities. On the horizontal

plane, the interest of heartland peoples are different to those on the periphery The Hindi-speaking 'Hindu' North envisions a future diametrically opposite to the rest of India. The whole question of goals is imminent in considering what is desirable in the field of government.

centrist elitism v. masses

There are broadly two views on the subject. The first is a sort of Brahmanical view. It is simple to the point of being simplistic. The argument is that India's future lies in the future of its middle-to-upper middle class. for that is where culture and creativity reside. Therefore everything should be so arranged that this class prospers. If this goal is pursued single-mindedly other benefits will flow in due course as by-products. The view is unabashedly elitist. And elitism of any kind cannot survive unless there is a strong state which backs it by enforcing favourable policies and programmes unflinchingly over both time and space Centrism thus becomes an integral part of this view Further, since progress is viewed as keeping up with the affluent Joneses of the developed world, modern management and high tech acquired crucial importance because, so the argument runs, these are what have taken those Joneses where they are today. There is thus a search for technomanagerial solutions in every field, even in the field of government.

"There is no reason why the feasibility of computerising land records should not be explored. This would make land administration more efficient and hopefully less corrupt. But the full benefit of such an exercise would be available only if, going by the logic of the democratic view, land reforms were to acquire priority as a policy".

The other is an essentially democratic view. It rests on two planks. One, that the central problem of this country is poverty and that, consequently, primacy must be given to the eradication of poverty in both its manifestations, poor people and poor regions. The second, that India is too large and diverse to be governed by a viceregal system operating from Delhi and that ways must be found to give meaning, and enlarge, the idea of federal democracy embedded in the Constitution. Both planks are people-oriented and together constitute the converse of centrist elitism. According to this view, what happens to India will depend on the degree to which social, economic and political space is opened up for the masses to enable them to participate in shaping their own and the country's future. This is the goal. In operational terms, since participative space can only be opened up by struggle for the right kind of policies and politics, the problem of government is viewed as basically politico-administrative in nature, the emphasis being on "politico" rather than on "administrative".

techno-managerial approach

Goal-wise views are antithetical to each other but in terms of things to be done not necessarily so in all respects. The worst way to seek an operational synthesis is to proclaim the rhetoric of the democratic view—we shall remove poverty, we shall promote grassroots democracy—but in fact to tread the Brahmanical path. A sensible synthesis would be to accept from the techno-managerial approach such elements as will make the machinery of government work better, but otherwise to rely on the democratic view to set the main agenda for government in 2001. For instance, there is no reason why the feasibility of computerising land records should not be explored. This would make land administration more efficient and hopefully less corrupt. But the full benefit of such an exercise would be available only if, going by the logic of the democratic view, land reforms were to acquire priority as a policy. A computer supported land reform programme across the country would bring about a sea-change in the rural scene. This is the kind of synthesis of technology and social engineering that we need to work towards.

What this illustrates is that the techno-managerial approach can at best improve the tools of governance; a better trained civil service, a more efficient information system, a speedier decision-making process, quicker and more courteous across-the-counter services. But the basic agenda for government in 2001 will have to come from a wider politico-administrative perspective.

states reorganisation, case for

First of all, let us look at what population growth is doing to the governability of territorial units. Over the decade ending 1981 population went up by twenty-five per cent. If we can manage to keep the rate down to this level, there will be a further increase of about fifty-six per cent by 2001. Three States will then be in the hundred million class : U.P. (174 m), Bihar (109 m.) and Maharashtra (95 m.). Four others will be around 80 millions : West Bengal (84 m.), Andhra Pradesh (82 m), Madhya Pradesh (81 m.) and Tamil Nadu (75 m.). Three more will be over fifty millions : Karnataka (57 m), Rajasthan (53 m) and Gujarat (53 m). And so on. Are these governable sizes ? Is there not a case for a second States reorganisation commission delineate more gov-

"The need to accommodate the rising tide of federalism may, if central leadership displays vision, compel a fair degree of decentralisation. The ultimate test will be the extent to which there is a visible shrinking of the machinery of the Union government".

ernable States out of the existing ones, without breaching the linguistic-cultural principle. The possibility of creating new States by putting together adjoining culturally-linked areas of two or more existing States should not be ruled out. An example would be a possible Bhojpuri-speaking State composed of culturally-linked districts of eastern U.P. and western Bihar, with perhaps Varanasi as its capital. The desirable population range could be 30 to 40 millions, though this itself would be for the suggested commission to examine. Possibly population will begin to stabilise in the early part of the 21st century and in that event no further reorganisation will be necessary.

and of districts too!

If expanding population is making States ungovernable, it is rendering districts unadministrable. Some of the States inherited very large districts in 1947 and were initially not disposed to make them smaller. But there is growing concern to make the districts more administrable evidenced by the fact that the number of districts in the country went up from 360 to 412 during the seventies But even the latest census discloses the existence of mega-districts like 24-Parganas (10.7 millions) and Midnapore (6.7 millions), both in West Bengal, and at least three dozen others with populations of over three millions If one were to say that districts should not ordinarily have populations, in 2001, larger than one and half to two millions, possibly half the present districts may have to be broken up. The reorganisation of districts has so far progressed sporadically. It now needs to be advanced systematically. If necessary with the help of special central funding

folly of overcentralisation !

Decentralisation as an idea bores tired minds, because it has been around for so long. However, it

"Because of communal sensitivities, it would be expedient to introduce the (common civil) code as an enabling facility for all citizens to avail of if they so wish. It should be left to its intrinsic appeal for beneficial consequences to follow".

is more relevant now than ever before and is likely to become increasingly so in future The case for its inclusion in the agenda for 2001, therefore, deserves examination Colonial rule was centralised in terms of ultimate authority, but the provinces and districts had a good deal of functional autonomy. After Independence several centripetal forces went to work. One was the entirely correct principle that India needed a strong centre, but a wholly mistaken interpretation that this called for piling up functions in the Union ministries. The continuance of the regime of economic controls carried over from the Second World War and the adoption of national planning gave the centre a finger in every pie. On the political side, the inner leadership of the Union government and the Congress High Command being one and the same, the States which were mostly in Congress hands in the early decades tended to function as subordinate formations of an over-centralised Union. The result was an enormously expanded central bureaucracy with sprawling ministries for which vast 'bhavans' had to be built Agriculture is a State subject but Krishi Bhavan in New Delhi is larger than most State secretariats.

"What is necessary is to turn planning process to the emerging federal system. Planning at the national level must be made more relevant, which can only happen if firstly, it is backed up by planning at State and district levels and, secondly, its broad strategies are supported by national consensus"

There are indications that the folly of over-centralisation is beginning to be recognised. The States, especially those under non-Congress rule, are pressing for decentralisation now that the federal idea submerged under Congress hegemony for so long has begun to sprout. The Seventh Plan talks of "effective steps for the decentralisation of planning and development administration". But centrism is a hydra-headed monster. Whatever the Planning Commission may say, Union Ministries, keep expanding the list of centrally sponsored schemes And the gut reaction of the Home Ministry to every new situation is to raise more para-military battalions It is sincerely to be hoped that the Sarkaria Commission will introduce some sanity into Union-States relations. But the likelihood is that its report will reopen and not close what has so far remained a suspended debate on decentralisation. The need to accommodate the rising tide of federalism may, if central leadership displays vision, compel a fair degree of decentralisation. The ultimate test will be the extent to which there is a visible shrinking of the machinery of the Union government

in states too !

Will the States in their turn be willing to decentralise matters to the districts? The truth is that they are as much guilty of centrism as the Union. If the Union has bogged itself down in trying to do the work of the States, the latter have appropriated functions which should rightly belong to local governments. The flow of "misappropriated" functions back from the Union to the States must be matched by a similar flow from the States to the districts. The big question is whether the downward flow from the States will be by administrative delegation to district collectors or by statutory devolution

to democratically elected district governments. Thirty years ago we made the mistake, following usage by Western scholars, of putting district administration into two compartments, development and regulatory. This enabled a compromise to be struck, development administration to go to elected bodies and regulatory to remain with collectors. The distinction is artificial and untenable, for if development succeeds in raising the oppressed lower strata, regulatory administration must help them when the backlash comes from the upper groups. But we have remained grooved in our thinking and, on present indications, will march into the 21st century with 19th century collectors in the lead carrying regulatory banners. Serious thought needs to be given to the development of full-fledged elected local government in the districts, spanning both development and regulatory functions.

strategies for coherence

Strategies of decentralisation alone may become a recipe for fragmentation unless they are counterbalanced by strategies of coherence. So let us look at some strategies that might help to promote coherence.

It seems that at any given time a third to a half of the country may, at the State level, be under the rule of parties other than the one in power at the Centre. Much the same would be the position within the States where elected district governments are introduced. That is to say, anywhere up to half the districts in a State may be with parties other than the one ruling the State. In such a situation forums for consensus building and dispute-resolution are necessary. Two kinds of forums could be considered. The Rajya Sabha was intended to be a council of the States but in practice has been not much more than a second chamber. Its composition and functions could be revised so that it serves as a federal forum at the national level. Recomposed legislative councils could perform a similar role at the State level. The alternative is the much-advocated inter-State council, utilising Article 263. If there is a case for such a council at the national level there is clearly also a case for inter-district councils in States which go in for elected district governments.

common civil code, a must

India has a common market and a common polity. Both serve as integrating, not homogenising, forces. But we still do not have a common civil code. The debate following the Shah Bano judgement has generated more heat than light. At the end of it all one is left with the thought that, more than ever before, it is necessary to address ourselves to the tasks of enacting a suitable civil code. The Hindu Code was a giant stride forward, but that Code applies only to Hindus. Also, it is not free from defects. Women's groups have criticised it as not providing gender equality. The concept of the Hindu Undivided Family has been viewed as a tax haven conceded to one community but denied to others. The new code would have to transcend all this. Because of communal sensitivities, it would be expedient to introduce the code as an enabling facility for all citizens to avail of if they so wish. It should be left to its intrinsic appeal for beneficial consequences to follow.

We must not stray away from national planning as the chief instrument for the socio-economic development of the country. In the past planning has suffered through over-centralisation. It now seems to be in danger of being crippled through over-reliance on the so-called market forces. What is necessary is to turn the planning process to the emerging federal system. Planning at the national level must be made more relevant, which can only happen if, firstly, it is backed up by planning at State and district levels and, secondly, its broad strategies are supported by national consensus. Existing planning capabilities in the States and districts are fairly rudimentary and the task of building them up must receive priority. Planning needs to become federal in orientation without losing its national perspective. Above all, planning at all levels must not lose sight of two objectives vital for achieving coherence in the country : the removal of poverty and the rectification of regional imbalances. The Prime Minister has spoken of missions in the field of science and technology. Let there be missions in the war against poverty also : one, land reform ; two, dry land farming ; three, a cut-to-essentials minimum needs programme comprising only two items, subsidised food for the poor and drinking water ; and four, security for the oppressed against the Arwal-type police-cum-landlord oppression.

Lastly, nothing will avail if we do not have cleaner politics. The key to this lies in attracting good people into political life. Opening the door for them means doing at least two things. One is reforming the electoral process to reduce, if not totally eliminate, the role of money power, and generally to restore health to the party system. State funding of party candidates should be seriously considered. So should compulsory audit of party funds. The other is utilising elected local governments at the district level as nurseries for inducting fresh talent into politics and grooming promising incumbents for higher responsibilities at State and Union levels. It would be absurd to recruit good people and let them suffer the mortification of seeing bad people flourish. Effective watchdog institutions in the shape of a Lokpal at the Centre and Lokayuktas in the States must, therefore, become an integral part of the politico-administrative system. Even more important than that, heads of governments at the Centre and in the States (as well as in the districts when district governments arrive) must learn not to act as little Caesars but try to remain above suspicion like Caesar's wife

Social pattern

Shocks and shock absorbers

K. F. Rustamji

The author, while providing a touchstone for planning, says that, "the real test of planning is that we should never be overtaken by events or by unpleasant developments; that we should observe trends, well before they become unmanageable." Enumerating the shocks that we may face in future, he advises that the Planning Commission ought to have a section that prepares us for the worst possible eventualities— a section "that should have the answers to every scientific crisis, every new development in the drama of pollution, star wars, bacterial visitors from outer space and mutations caused by genetic engineering".

THERE IS NOTHING IN OUR SYSTEM OF GOVERNMENT that provides for the total planning of our advance. The Planning Commission does a bit, mainly on the resources side. The Legislatures try to feel the way. Debates, which are the hallmark of a democracy, tend to lose their value in political recrimination. The manifestoes of political parties show glimpses of vigour but they are soon forgotten. The media depend mainly on exposures of villainy, which have relevance no doubt, and occasionally they do produce an outstanding article or editorial on planning. There may be a scientist, a politician, a writer of singular vision. but we have no method of utilising his vision. Democracy, or rather the freedom to speak, gives us a way of finding out the fears and apprehensions of all regarding the future. But so far we have tended to go only by the advice of people who regard the system as perfect. And yet, they are the first to be bowled over by the unexpected or the expensive blow.

test of planning

The real test of planning is that we should never be overtaken by events or by unpleasant developments— that we should observe trends well before they become unmanageable, spot out the technological advances in

good time, and not lose out on applications because of scientific ignorance or bureaucratic hesitation. We must have a fair idea, if not a complete one, about what the future holds for us in any field—political, economic or social.

Pundits of planning like to pore over the Seventh Plan. They make concrete suggestions about targets, priorities and aims, major thrusts, reviews, policy frameworks. They relish the jargon as if they were savouring the poetry of a Ghazal. They even make the revelation that poverty will be extinct by a certain year, and when they modestly forget about it the next year.

shocks and shocks

What I would like us to closely examine are the areas in which we may receive unexpected shocks. What are the future shocks that are in store for us ? Are we prepared for them ?

When I look back at the years after Independence, I wonder why we never thought that population will become our number one problem. We were well into the sixties before we came to realise that there were chances of a population explosion, and even then few believed it would threaten our existence. If we had dealt with the problem from the very beginning, if we had made the marriageable age of girls 18 from 1947, and insisted on its enforcement by panchayat and court (which we fail to do even today) we may not have been in the predicament that we are in. From this one mistake we can trace the continued defects of planning. We were always using the wrong data, the wrong targets, the wrong strategies for any problem in which numbers count All our cities and towns have begun to decay. Telephones water, sewage, schooling, transport—everything is less than required. Then our villages ceased to count. They had to be relegated to the background in the face of the clamour for more and more in the urban areas.

Yet, if we have the genius, we can turn population which looks like weakness today into an enormous source of strength. Imagine an India of one thousand millions—integrated, vibrant and productive—with peace all around, and expenditure on defence restricted to present levels

At the time of Independence, our greatest fear was that food production would not be sufficient to feed the nation. We had just come out of the dreadful Bengal famine in which thousands had died of starvation We had realised how difficult the problem of increasing food production was. In the fifties we had to make considerable imports, undergo great obligations to get the food we required. But once we put a whole-hearted effort into it—from the political, scientific and the agricultural angle—we found the solution, with the result that today we are producing three times the food that we could produce at Independence, and we may be able to double the production that we have achieved, or even go further and become an exporting country.

the lessons

The lesson that we must learn from this is that we can solve any problem if we give undivided attention to it, and if we identify the problem in time. Our resources are so enormous that we can solve any problem provided we listen to those who have the foresight to spot it out, and do not term their forecasts as alarmist and anti-government. Are we able to listen to those who are called critics or pessimists, because they see things differently from the scholars in Yojana Bhawan ?

Why could we not see that corruption would hit us so badly ? If we had been able to see events clearly, would we have pegged salaries so low, refused to have a national policy on wages, and made only a feeble attempt at funding elections, and left it to the selfish caprice of industrialists wanting licences ?

We may not have been made to see that superstition will become so popular, and soothsayers infest the houses of the powerful, and Maharishis export meditation, but surely we ought not to have dropped our guard against communalism because we had seen the damage that it caused to the entire world around us.

We should have been prepared for the rightist swing in politics, the rise of sectarian politics and regional parties, which is a desirable feature if federailsm is our aim and integration is a word that is able to accommodate all our ambitions

Could we have foreseen the size and extent of the middle class, which has become the most powerful lobby in politics ? Why is it that the left, so badly needed in a poor country like ours, has not been able to come up at all ? The poverty line encompasses 50% of the people. The rural masses have hardly a say in matters, either their representatives in the Legislature are shy of articulation or problems are too distant for study by the media. In the struggle for survival each section wants to stimulate distress and get more than a fair share of the cake.

Our policies regarding labour relations are totally antiquated and unsuitable for the 21st century. Can we move away from the out-of-date philosophies of the past ? It is labour agitations, particularly the violent ones which have made every industry, every company, even government, go for projects which far from being labour intensive are labour restrictive. The entire effort of industry, whether in the public sector or the private sector is to reduce the number of workers to the minimum, not on grounds of economy, but on the ground that there may be labour problems which they may not be able to handle. Is this not a crime committed against the youth of this country ?

Could we not foresee that large duties on imported machinery and raw material would make it impossible for us to compete in foreign markets, even in products in which we had a traditional advantage—that smaller countries like Taiwan and Korea would beat us at the post every year in exports ?

Those who set Pakistan against India have ruined us both. Some day the entire area of South-East Asia will fall into the crucible of reorganisation. What flags will then fly? Will we content with common markets or go further and see how indentical our interests are ? Will women take the lead in bringing us together ?

We have had some good surprises too. We became world champions of one-day cricket for a few months atleast. Gavaskar broke all records and an Indian girl became Miss World. We got a good Prime Minister who led the large NAM with credit. Though we got few Nobel Prizes, we made scientific discoveries in several fields abroad. We lost in hockey, came up slowly in sports

the shocks in store

What are the shocks that are in store for us ?

One of these shocks may be caused by drugs We are still indifferent about its prevalence. We have no idea of how widespread it is becoming. All that we know is that crores worth of hard drugs are seized every week. Here and there at street corner we see scenes of harrowing addiction, women on high withdrawal, men morose and far away, children selling drugs that will poison a whole generation.

Another shock may be a very high crime rate—mafias of crime and smuggling meddling in politics—rioting and terrorism rampant because our criminal justice system fails to protect the innocent and punish the guilty. We just do not have the men who can correct the area of justice.

All these can be easily forecast by any one familiar with the national scene. But what about the totally unexpected :

The drought which dries up the whole country and leads hundreds to death due to thirst—a famine throughout the world, Ethiopia, everywhere.

Currency crashes, one after another, that wreck the financial stability of the world.

The earthquake that rocks Calcutta or Bombay like San Francisco and leaves thousands buried in the debris.

The unusual strain of bacteria, worse than AIDS that carries away thousands.

The nuclear power leak, people gasping for breath in Nagpur or an inland city because the air is deficient in oxygen—floods from the Himalayas due to felling that make Delhi another Patna for three weeks—and such a serious cooking fuel shortage that roadside trees disappear in thousands !

and how to absorb them ?

In the Planning Commission there ought to be a section that prepares us for the worst possible eventualities, a section that would find nothing unexpected, nothing overwhelming. They would have the answers to every scientific crisis, to every unexpected slap, to every new development in the drama of pollution, star wars, bacterial visitors from outer space, and mutations caused by genetic engineering.

"It will be a national shame if, because of wrong choice of priorities, India has to approach the year 2001 with vast masses of population remaining illiterate or without access to even elementary school education. Since this entire approach to the planning for production and services is away from the aspirations of the vast majority of common people, there is an inherent tendency in this approach to shut the democratic participation of the people out from the process of planning, and to centralise instead economic powers and powers of decision-making in the hands of the Central Government. ....When such attempts are made to concentrate powers in the hands of the Central Government, then the common people in the different States tend to lose the feeling of participation in the process of planning. When this feeling is lost and also the problem of unemployment, because of a wrong choice of strategy, is aggravated, divisive forces in the name of religious fanaticism, casteism, obscurantism get encouraged, threatening the basis of unity and integrity of our country. We have to oppose all these divisive forces in unequivocal terms. We have to build a strong and united India. For this, economic base of each of the States has to be strengthened. Then only the entire India—the Centre and all the States together—can remain powerful. We want our young people to enter the 21st Century by breaking down all the walls which divide common people in the name of religion, caste, etc."

JYOTI BASU

Extract given on back cover is from the speech of the Prime Minister, Shri Rajiv Gandhi, delivered at the Columbia University, New York, on October 22, 1985

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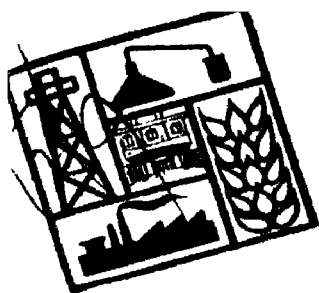
"What, you may ask, will this India be ? I see an India firmly rooted in her traditions and yet reaching out to the promise of new scientific knowledge. I see an India whose diversity is constantly enriched even as her unity is strengthened. I see an India entering 21st century free of the bondage of poverty, and taking her rightful place as one of the world's major industrial economies. This will be a new and exciting phase in our development effort. Some of it will be based on a continuation and reinforcement of processes that are already in motion as in agriculture. ... We have already made substantial progress in lifting large masses of our people above the line of minimum need. Our first priority in the years ahead will be to complete this task so that before the end of this century, poverty as we have known it will be a thing of the past. Every village in India will be electrified, assured of clean drinking water and adequate health services. Our family planning programmes will have covered the entire population, and population growth, which in the past has eaten up much of the growth in production, will have been brought down to almost 1 per cent."

—RAJIV GANDHI

Administered pricing

NEXT ISSUE

Focus on public sector

Growth of agriculture during Seventh Plan

ACCORDING TO THE SEVENTH PLAN document agriculture occupies a key position in the Indian economy because of its contribution to overall economic growth through supplies of food, raw materials and exports. It is a source of livelihood for a majority of the population and provides a large market for non-agricultural goods and services.

The agricultural output continued to grow at a steady rate during the Sixth Plan period. The target fixed for the growth of agriculture during the Seventh Plan period is 4% per annum and the target for foodgrains output is 3 7 % per annum. To achieve these targets, efforts will be made to irrigate an additional area of 11 million hectares during the Seventh Plan period. The consumption of fertilizers will be increased from 8 4 million tonnes in 1984-85 to 13 5–14 0 million tonnes in 1989-90.

The major programme thrusts in the Seventh Plan are:

(1) Special Rice Production Programme in the eastern region,

(2) National Oilseeds Development Project,

(3) National Watershed Development Programme for rainfed agriculture,

(4) Development of small and marginal farmers, and

(5) Social forestry. □

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Imperative of taxin
the rural ric

Dr. Kamta Prasa

The scope of direct taxation on agricultural income, according to the author, is not very wide; it is linked to the adequacy of irrigation facilities. He feels a scheme for graduated taxation on irrigation based on the size of the farms may be considered. He, therefore, calls for an immediate review of the prevailing policy of subsidising irrigation to ensure that large farms do not get the subsidy. As irrigation and taxation have to go together, the author suggests that scheme for agricultural, taxation may be enforced in the beginning in the well established irrigation command areas having assured irrigation.

THE NEED FOR TAPPING additional sources of public revenue for financing ever-rising development and non-development expenditure coupled with the objective of bringing about a more equitable distribution of income has perhaps led to the present Yojana exercise on taxing the agricultural rural sector which has been left out of the tax net in the Long-term Fiscal Policy. There can be little disagreement with regard to the need for such taxation on a priori considerations. Growth and redistribution have been the avowed objectives of the nation for a long time. Any measure designed to widen the tax base and promote equity would, therefore, be regarded as a welcome development in the larger national interest. The more relevant question is with respect to the scope and feasibility of such a measure. In other words, the issue is esse tially empirical in nature. What is needed is a d passionate analysis of the subject in the light of t present day rural realities.

Pattern of land-holdin

The structure of direct taxation in India rests a narrow base largely because agriculture, wh providies employment to the 60 per cent of (labour force, contributes a negligible proportion direct taxation. Land revenue, an important inst ment of direct taxation of agriculture, has ceased be a major source of public revenue for a lc time. Extension of direct taxation, of the type of income tax, to agriculture, however, will not wic the tax base to the extent suggested by the fig related to employment given above. The 60 per c of the labour force engaged in agriculture con butes only about 40 per cent to the country's tional income. This also shows that the per cap average income in the agricultural sector is less tl half the per capita average income in the n agricultural sector. In addition, a significant part the agricultural income is contributed by a la number of farmers whose earnings are below the emption limit of income for income tax purpos One would. therefore. like to know the proport of national income contributed by those farmers h ing income higher than the exemption limit A what would be the number and distribution of su farmers over different income classes and differ regions ? These issues require detailed and relia information on the distribution of income amo agriculturists which is not available. What is av able is information on the size distribution of la holding provided by the agricultural census. T latest year for which this information has been pu lished on all India basis is for 1976-77. Assum that an acre of land in a given agro-climatic z

irrigation situation has more or less the same productivity irrespective of the size of holding, it is possible to get an idea of the proportion of agricultural income contributed by farmers of different size groups. Information on land holdings of different categories of farmers for the years 1970-71 and 1976-77 is given in Table 1. It is the figures with respect to total operated area which are more important for determining any estimate of the quantum of tax revenue. Figures related to number of holdings are more useful for working out the administrative implication of tax proposals. Taken together, these two sets of figures provide an idea of the extent of inequality in land holdings.

Table 1

Percentage Distribution of Number of Holdings and Total Operated Area by size classes.

Size class	No. of Holdings		Total operated Area	
	1970-71	1976-77	1970-71	1976-77
Marginal (Below 1 ha.)	50 0	54 7	8.9	[illegible] 7
Small (1 to 2 ha.)	18 9	18.0	11 8	12 8
Semi-Medium (2 to 4 ha)	15 0	14.2	18 4	19.8
Medium (4 to 10 ha.)	11 2	10 1	29 7	30 4
Large (10 ha. and above)	4.0	3 0	31 2	26 3
Total	100 00	100 00	100 00	100 00

Source : *Agricultural Census, 1976-77 as reported in the Agricultural situation in India*, October, 1981.

Land-holding and tax exemption

Before proceeding further, it is necessary to know the size class of farmers having a level of income which would fall within the range of direct taxation. According to the current provisions of the Income Tax Act, an individual earner with an income of more than R.s 18,000 per annum is liable to pay income tax. In addition, there are certain concessions like those given under Sections 16(i) and 80(c) of the Income Tax Act. Consequently the effective exemption limit per earner would be higher say around Rs. 27,000 per month. Consideration of equity suggests that the exemption limit in rural areas should be higher than that in urban areas because several facilities like those of education, health, entertainment, marketing, banking and transportation are available less easily and at higher cost in rural areas as compared to the urban areas. Hence the rural people have to spend more in order to avail any given level and quality of these facilities. How much more, we do not know. For the sake of illustration, let us assume this to be Rs. 3,000 per annum. The effective exemption limit for rural areas may then be estimated around Rs. 30,000 per annum.

In the absence of data on inter-personal distribution of income in rural areas, it is not possible to know the number of farmers having income in excess of this limit. Some estimates can, however, be made by looking at data from a few field surveys. According to an estimate of distribution of rural income by decile groups based on the NCAER 1975-76 survey of income, the average household income per annum of the top decile in rural areas in 1975-76 was Rs. 12,278 which at current prices would amount to Rs. 24,556. (The price inflator used is the index of agricultural prices.) The income of the next highest decile was Rs. 5,903 in 1975-76 which would be equivalent to Rs. 11,806 at 1985-86 prices. Clearly it is the average income of the top decile alone which is approaching the taxable income level. Assuming an even distribution of income within the decile group, we can say that less than 5 per cent of rural households would have income above the exemption limit and more than 95 per cent below that. The proportion of eligible tax payers is likely to be much less than this if adjustment is made for size of the household and number of earners within a household. There is enough evidence to indicate that the average number of earners per household in rural areas in general and among large farmers in particular is more than two. Thus field survey conducted by the present author in the drought prone districts of Haryana, West Bengal and Jammu and Kashmir gives the following information. In Haryana, the average *number of earners in a rural family is 2.09 in the* village as a whole and 2.91 among large farmers; in West Bengal the respective numbers are 2.50 and 2.81; and in Jammu and Kashmir, 2.62 and 3.29. The reason for this is the continuance of the age-old joint family system and prospects of utilisation of family labour on family farm. Similar findings have been reported from a study on Rajasthan conducted by the NCAER. As a result, there is a tendency for several earners to continue to live in the same household and jointly cultivate their land even though they could claim independent legal status. Income per earner, which is the more relevant measure for determining tax liability in terms of existing law, would therefore, turn out to be half or less than half the figures mentioned above. This, in turn, would substantially reduce the number of families in the legal sense which can be brought within the tax net.

There are a few studies giving recent data on farm business income in some States. Two such studies relate to Punjab. But their findings are substantially different from each other. According to a recent study by Mr. P. L. Sankhayan as reported in the Economic Times of 27th April 1985, the per *household* average farm business income was Rs. 69,201 for farmers with a holding of more than 25 acres, Rs. 52,468 for those with a land holding of 20 to 25 acres in the reference year, 1982-83.

Adjusting for price changes (with reference to the index of agricultural prices). The respective values at current prices come to Rs. 83,041 and Rs. 62,962. The estimated income (at current prices) of farmers with landholding of 15 to 20 acres, 10 to 15 acres and 5 to 10 acres comes to Rs. 46,368, Rs. 36,372 and Rs. 29,047 respectively. In other words, even farmers having more than 5 acres can be caught within the net of personnel income taxation.

Another study for Punjab conducted by G. S. Bhalla and G. K. Chadha(Green Revolution and Small Peasant : A study of Income Distribution in Punjab Agriculture, Economic and Political Weekly, May 15 and 22, 1982) gives figures of farm business income which are almost half of the figures given in the previous study. Accordnig to this study, farm business income per family was Rs. 24,283 for farmers having a holding of more than 25 acres in the reference year of 1974-75. At current prices, this would amount to Rs. 43,709 which is much less than that of Rs. 83;041 in the earlier study. The figures for those with landholding of 12.5 to 25 acres is Rs. 24,453 (at 1985-86 prices) as against Rs. 62,962 and Rs. 46,368 in the earlier study for those with landholdings of 20 to 25 acres and 15 to 20 acres respectively. And so on for income at other levels of land holding. The findings of the earlier study are also not consistent with those of the NCAER cited earlier, Accepting the validity of the Bhalla-Chadha study for Punjab one can say that farmers in that State owning land above 12.5 acres (5 hectares) are in receipt of income above the effective exemption limit. This is more so when account is taken of the supplementary income derived from non-farm sources. As mentioned earlier households consist of more than one income earner. If calculations are made in terms of per capita income and family income in terms of family size of five members is computed then we find that average per family rural income (from both agricultural and non-agricultural sources) Rs. 17,478 and Rs. 24,741 for farms with land holding of 5 to 10 hectares (12.5 to 25 acres) and above 10 hectares (25 acres) respectively.

Agriculture in Punjab is known to be very developed enjoying the benefits of extensive and assured irrigation. The average level of yields of most crops in the country as a whole is about half the level in Punjab. It is even much less in dry and drought prone areas of the country. In the case of Rajasthan, for example, it has been found that yield per hectare in areas without irrigation was 1.7 quintals while in those with irrigation was 11.1 quintals in 1978-79. The net receipts to cultivator from all sources at current prices works out at Rs. 14,085 without irrigation and 36.347 with irrigation. The findings of Punjab, therefore, would not apply to most parts of the country. They would apply atmost to Haryana and Western U.P.

Thus, taking the country as a whole, one can assume that farmers with landholding of less than 10 hectares cannot be covered by existing income tax provisions. For States like Punjab and Haryana and other similar areas, the limit would be much lower, around 5 hectares, while it would be much higher for dry and drought-prone areas.

Direct taxation of rural income

As shown in Table 1, the number of holdings above 10 hectares was 2.44 million in the country as a whole and this constituted 3 per cent of total of agricultural holdings in the country. This is more or less consistent with the figure of affluent rural households (i.e., those with income levels higher than the exemption limit) estimated earlier on the basis of NCAER data related to decile distribution of rural income. The number of such holdings as well as the area operated by them declined during the period 1970-71 to 1976-77. A major reason for this has been the growth of population and consequent break up of large farms into smaller ones. The rate of growth of population has remained more or less the same since 1976-77. We may, therefore, assume that the rate of decline of large farms during the period since 1976-77 is the same as the one witnessed during the period 1970-71 to 1976-77. On this basis, the number of large holdings, which declined from 2.77 million in 1970-71 to 2.44 million in 1976-77 might have declined further to about 2 million by now. This gives an average of about 400 such farms per block. Any tax administration machinery should take this information into account. The cost of tax collection would obviously be high except in blocks where there is a much higher concentration of such farms.

The share of farms of more than 10 hectares size in total operated areas declined from 31.2 per cent in 1970-71 to 26.3 per cent in 1976-77 registering a fall of 4.9 per cent in 6 years or 0.8 per cent per year. Assuming, as before, the same rate of decline of the share of large farmers during the period since 1976-77, one may estimate a further fall in their share by 6.4 per cent during the subsequent 8 years upto 1984-85. In other words, the share of large farms in total operated area may be assumed to be at around 20 per cent now. This implies that only about 8 per cent (40 per cent X 20 per cent) of national income might be accruing to those farmers who are in a position to pay the income tax. Rising population and consequent reduction in the number of and area operated by such farmers would further reduce this proportion in future. In addition, we also notice that the average size of large farms declined from 18.09 hectares in 1970-71 to 17.53 hectares in 1976-77 and assuming this trend to continue,

it might have declined to less than 17 hectares by now and may declined further in future. (The average size per individual earner the more relevant measure for tax purposes would be still lower in view of facts discussed earlier). In other words, direct taxation of large farmers cannot be an elastic source of taxation. The picture will, however, be modified on account of increase in irrigation facilities and consequent rise in farm productivity.

How much tax can be collected from the large farmers would depend upon the distribution of such farmers in different farm sizes. Table 2 gives this information for farm size above five hectares. It can be seen that most of the large farmers have landholdings of less than 20 hectares. The number and area operated of very large farms (i.e., more than 20 hectares) are insignificant. In other words, the marginal and average rate of direct taxation per tax-paying farmer is not expected to be high.

These findings are consistent with the ceiling legislation which has been in force in most parts of the country. Because of that legislation, the size of land holdings under one legal owner does not exceed the prescribed ceiling which is not very high and which does not permit a very high level of income. Not many farmers having land upto the prescribed ceiling would be in a position to earn income above the effective exemption limit.

Table 2

Sizewise classification of Operational Holdings Number and Area—1976-77

Size (ha.)	No. of operational holdings	Percentage to total	Area' 000 hectare	Percentage to total
5 0—10 0	5,381	6 6	37,067	22 7
10 0—20 0	1,943	2 4	26,035	15 9
20 0—30 0	323	0 4	7,648	4 7
30 0—40 0	91	0 1	3,090	1.9
40 0—50.0	36	Neg.	1,572	0.9
50 0 & above	47	0 1	4,528	2 8

Source :—Agricultural Census 1976-77

There is another related aspect. From the data presented in Table 3, it can be seen that most of the large farms are locatel in dry or drought-prone States of Rajasthan, Madhya Pradesh and Maharashtra which taken together have 57 per cent of such farms and 58 per cent of area operated. Next in importance are Andhra Pradesh, Karnataka and Gujarat which also have several drought-prone districts. In contrast, Punjab and Haryana taken together have only 5 per cent of such farms. U.P. as a whole has only 3.08 per cent and, therefore, the agriculturally developed western U.P. would be having a still lower percentage of area under large farms.

Table 3

Statewise Percentage Distribution of Large Farms (more than 10 hectares)

	Number of Farms	Area Operated
Rajasthan	20.75	24.74
M.P.	18 68	18 17
Maharashtra	17.46	15.30
A.P.	8 58	8 33
Karnataka	8 16	7.60
Gujarat	7 96	6.83
U.P.	3 51	3 08
Bihar	3 42	3 43
Haryana	2 97	2 81
Punjab	2 52	2 53
Others	5 99	7 18
Total	100 00	100 00

Source : Agricultural Census 1976-77.

It may be inferred from the above that most of the large farms might not be having the benefit of irrigation. This is confirmed by data on size distribution of holdings according to irrigation status in 1976-77 (see Table 4).

Table 4

Percentage Distribution of Medium and Large Farms according to Irrigation Status

Size Group (ha.)	Wholly Irrigated	Partially Irrigated	Wholly Unirrigated	Total
(A) Number of holdings				
4—10	7 81	35 32	56.87	100 00
10 and above	4 14	35 41	60 45	100 00
All groups	20 44	22 36	57 20	100 00
(B) Area Operated				
4—10	7.21	36 15	56 64	100 00
10 and above	3 14	35 70	61 16	100 00
All groups	10 96	32 23	56 81	100 00

Source —Agricultural Census 1976-77 as published in Indian Agriculture in Brief, 19th Edition, Ministry of Agriculture, p. 13.

Strategy of rural taxation

Thus, the scope for direct taxation of agricultural income is not as wide as is often supposed to be. Under average conditions of Indian farming with average and uncertain rainfall supplemented marginally by irrigation, farms above 10 hectares in size may come under income tax paying category In dry and drought-prone areas the limit may go upto 20 hectares. But in areas like Punjab, Haryana and Western U.P. with assured irrigation throughout the year even farms of five hectare may come under this

(Continued on page 27)

Taxing the rural rich

It's an immediate task!

Dr. B.B. Bhattacharya

"From a pure economic point of view the agricultural sector perhaps does not contribute its due share in Government tax revenues, particularly if we consider the amount of subsidy given for agricultural production", says the author. And he adds, "From the equity point of view, there is no rationale of undertaxing rich farmers vis-a-vis non-agricultural income earners". He also advocates for increasing direct tax collection from the agricultural sector through an enhancement of land revenue rates".

AGRICULTURAL TAXATION has become a thorny issue in India's economic policy. Although taxation of non-agricultural income is evaluated essentially in terms of its economic impact, the same on agricultural income always becomes a political issue. From a pure economic point of view the agricultural sector perhaps does not contribute its due share in government tax revenue, particularly if we consider the amount of subsidy given for agricultural production. Two issues are important in this context : a) taxable capacity of the agricultural sector vis-a-vis the non-agricultural sector, and b) development needs of the agricultural sector vis-a-vis the non-agricultural sector.

Minor contribution

Agricultural sector pays both direct and indirect taxes. Direct taxes from the agricultural sector are collected mainly in the form of land revenue. Agricultural income tax forms a minor proportion of direct tax revenue from the agricultural sector. In the year 1984-85. for instance, the share of agricultural income tax in the total direct tax collected from the agricultural sector—land revenue plus agricultural income tax—has been only 15 per cent.

The share of the agricultural sector in the direct tax revenue of the government—centre, states and union territories—has declined steadily over time. The share was about 23 per cent in 1950-51, 28 per cent in 1960-61, 13 per cent in 1970-71, 7 per cent in 1980-81 and 5 per cent in 1984-85. The relative contribution of the agricultural sector in financing government expenditure on agricultural and rural development has also declined over time, see table below .

Table 1

Direct tax from the agricultural sector as percentage of government expenditure on agricultural and rural development

Year	Direct tax from agriculture as percentage of national income	Govt. expenditure on agriculture and rural development as percentage of* national income	Direct tax from agriculture as percentage of Govt. expenditure on agriculture and rural development
1950-51	0 6	0 4	150
1960-61	0 8	1 1	73
1970-71	0 4	1 0	40
1975-76	0 4	1 9	21
1980-81	0 2	2 5	8
1982-83	0 2	2 8	7

*both revenue and capital

Source : Govt. of India, Ministry of Finance, *Indian Economic Statistics, Public Finance*, December 1984, pp 38-39.

Table 1 shows that while the percentage share of government expenditure on agricultural and rural development in national income has increased sevenfold between 1950-51 and 1982-83, the same of the

direct tax from the agricultural sector has gone down by three times during the same period. The relative contribution of the direct tax from the agricultural sector to the Government expenditure on agricultural and rural development has come down sharply from 150 per cent in 1950-51 to 40 per cent in 1970-71 and to a mere 7 per cent in 1982-83. The direct tax from the agricultural sector therefore now contributes virtually an insignificant proportion of government expenditure on agricultural and rural development, leave alone contributing to other essential public expenditure on health, education or even defence.

The rationale

It is difficult to assess the relative contribution of the agricultural and the non-agricultural sector in the indirect tax revenue of the government. Most indirect taxes are levied on non-agricultural goods, which are also consumed mainly in the non-agricultural sector. Bulk of the production subsidy given by the Government also goes to the agricultural sector. On balance, the net contribution of the agricultural sector to the indirect tax revenue may be much smaller than the same by the non-agricultural sector.

Apart from political problems of taxing agriculturists, there are two economic arguments advanced against increasing taxes on agricultural income. First, it is said that there are not many rich farmers, so the scope of direct taxation of agricultural income is very limited. Secondly, it is argued that the cost of collecting direct tax from agriculturists, considering the intricate problem of measuring agricultural income at the farm level, would be very high, and hence, there may not be much gain in tax revenue.

In the pre-green revolution period the number of rich farmers were probably very few. In the post-green revolution period, however, the number of rich farmers, particularly, in agricultural prosperous regions of Punjab, Haryana, West U.P., Gujarat and Coastal Andhra Pradesh, has increased tremendously. Many of these farmers are also direct beneficiaries of the government subsidies on food and fertiliser. From the equity point of view, there is no rationale of under-taxing rich farmers vis-a-vis non-agricultural income earners.

And the justification

According to the latest data on rural households income and consumption, published by the NCAER, top three per capita income decile in rural areas now save a very significant proportion of their income—see Table 2. The share of non-food items in consumer expenditure of rural rich households in also now quite high—more than 40 per cent in the case of richest 10 per cent rural income earners.

Table 2

Per capita per Annum Income and Consumption by top three decile groups in the Rural areas (1981-82)

Per capita Income Decile	Consumption Expenditure			Income	Saving as percentage of Income
	Food	Non-food	Total		
		(Rupees)			
8	766	522	1288	1534	16
9	907	601	1508	1899	21
10	1320	904	2224	3317	33
Over all	632	390	1022	1142	10

Source : NCAER—Changes in Poverty and Consumption pattern in Rural India between 1970-71—1981-82, 1986.

If NCAER data is a fair indication of the rural prosperity, then it appears that top 30 per cent rural households now save almost at the same rate as corresponding urban households. These households also spend a substantial proportion of their income on non-food items, which is a positive indication of the improvement in their standard of living.

Average per capita income of top 10 per cent of rural households in 1981-82 was Rs. 3317 per annum. Assuming an average household size of 6, the average household income of top 10 per cent of rural households in 1981-82 was about Rs. 20,000 per annum. Since rural income distribution is very skewed it would be reasonable to assume an even higher average household income of top five per cent rural households. The available data therefore suggests that there is a lot of scope for direct taxation of agricultural income, particularly of top five per cent of rural households.

Increase land revenue rates

The collection of agricultural income tax from rich farmers may be however very difficult. First of all, there is no systematic data on agricultural income at the farm level. Secondly, valuation of net agricultural income every year may not be feasible. There is however a considerable scope for increasing direct tax collection from the agricultural sector through an enhancement of land revenue rates. Land revenues are easier to collect and in most states a systematic record is maintained on land holdings. The main reason for which the collection from the land revenue has not kept pace with the national and even agricultural income is the virtual stagnation of land revenues rates in most States since 1950s. In many States the absolute rate of land revenue—in both irrigated and unirrigated lands—has remained constant since 1950s, whereas the productivity of land—irrigated as well as unirrigated—has improved considerably since then.

There are three reasons for raising land revenue rates. First, the productivity of land, particularly irrigated land, has increased considerably since the land revenue rates were revised in most States. Secondly, inflation has decreased the real value of land revenue rates fixed in nominal terms. Finally, the development needs of the economy, both rural and urban, are also increasing over time. Since the public sector bears the main brunt of providing economic and social infrastructure in the economy, the tax revenues of the public sector must therefore be more elastic with respect to economic growth. Thus from both equity and resource mobilisation points of view, direct tax from the agricultural sector, particularly, land revenue, should be made more elastic with respect to national income.

It is often argued that the disparity between the urban and the rural areas is widening in the Indian economy. The rural areas are predominated by small and subsistence farmers, while the urban areas are advancing by the industrialisation programme. Further, it is alleged that, since much of the public expenditure is spent on urban development, there is no rationale for taxing poor farmers in the rural areas. These arguments, however, do not reflect reality anymore. While it is true that most of the rural regions have remained economically backward, some of the rural regions have progressed significantly in the post-green revolution period. Besides, if agricultural taxation is made progressive then an enhancement of land revenue rates need not affect poor farmers. A progressive land revenue rate structure also may not lead to any political problem.

It's no political issue

During the last two Plans—Fifth and Sixth—the agricultural sector has performed relatively better than the non-agricultural sector. During this period the saving rate in the economy has increased significantly. Ironically, however, the financial resource position of the public sector has deteriorated during this period. One of the reasons for this is the relatively faster growth of public expenditure on agricultural and rural development vis-a-vis tax revenue from the agricultural sector. Since most agricultural regions in the economy have remained backward, the need for further public investment in agricultural and rural development is now no less than before. It is all the more necessary therefore that the relatively prosperous agricultural regions, and particularly, rich farmers, should contribute their due share of tax revenue. Failing which, the resource base of the public sector, already at a critical point, will shrink even further and this, in turn, will lead to a curtailment of development programme of not only of urban regions but also of backward rural regions. Viewed in this context, agricultural taxation no longer remains a political issue between agriculturists and non-agriculturists, but becomes instead an issue of inter-personal, inter-regional and inter-sectoral equity. □

Fruit production to go up under Seventh Plan

The annual fruit production target is to be raised to 28 million tonnes by the end of the Seventh Five Year Plan. At present the annual fruit production is 23.50 million tonnes. To ensure this rise in production, the Central Government has launched a programme for cultivation of good quality fruit plants The provision of Rs. 25 crore for the Central Sector Scheme for fruit production during the Seventh Plan has since been raised to Rs. 58 crore.

Under the Elite Progeny Orchard Scheme, which covers 18 farms of the State Farms Corporation of India, five million pedigry plants are to be produced every year and made available for fruit tree plantation.

The National Horticulture Board has started a scheme to strengthen selected Government fruit nurseries in 18 States to supply 1.25 million grafted mango, citrus, litchi and apple plants annually.

The Indo-Italian Project on Temperate Climate Fruits, now being implemented in Uttar Pradesh, Himachal Pradesh and Jammu and Kashmir, is set to introduce improved varieties of olive and other fruits.

The Coconut Development Board has established eight regional nurseries in Karnataka, Tamil Nandu, Orissa, Andhra Pradesh, Maharashtra, Bihar, Tripura and Goa. These nurseries will produce about 0.8 million coconut seedlings per year.

Genetic improvement and rejuvenation of diseased and productive plantations raised coconut production during the Sixth Plan from 5,636 million nuts in 1979-80 to 6,887 million nuts during 1984-85, exceeding the Plan target of 6,750 million nuts production per year. Productivity per hectare also increased from 5,239 nuts in 1979-80 to 5,774 nuts in 1984-85. Area under coconut plantation is being increased by introducing coconut to non-traditional states like Bihar, Madhya Pradesh, Assam, West Bengal, Orissa, Tripura and Manipur.

India being the supplier of 40 per cent of the 70,000 tonnes cashewnut required in the international market, earned as much as 180 crore in foreign exchange in 1984-85. The cashew cultivation is being introduced in non-traditional areas like Andhra Pradesh, Orissa, Maharashtra and West Bengal also. Improved techniques are being introduced under a centrally sponsored scheme in Kerala, Karnataka, Andhra Pradesh, Orissa, Goa, Maharashtra, West Bengal and Tripura. The area under cashew cultivation has increased from 4.47 lakh hectares in 1979-80 to 4.81 lakh hectares in 1981-82. The production in the same period also increased from 1.8 lakh tonnes to 1.95 lakh tonnes, which rose to 2.2 lakh tonnes in 1984-85. □

But it needs political will!

Navin Chandra Joshi

The author here advocates that the Centre and the States should take necessary initiative to tax agricultural income and help ease the resource constraints of the Seventh Plan. This, he says, would help eliminate disparities in rural income. Moreover a sizeable number of big farmers now fall in the high income bracket. There is no reason why rich class of farmers should not make their due contribution in our developmental efforts. The author feels that there seems to be no reasonable ground for allowing them to take substantial portion of the benefits accruing from the subsidy allowed to the agricultural sector. He says "It is high time that States resources be consolidated and the Centre must muster up its political will for doing so."

THE PRODUCTION SURPLUS in Indian agriculture today suggests the possibility of an increase in the dimension of our agricultural tax net with ease. There is a dire necessity of a tax venture on agricultural income if reduction of income inequality is one of the major objectives of our economic policy. The agricultural income-tax system can be so designed as to provide incentive to the agriculturists to produce more by optimal utilisation of the land, by bringing viable yet unused land under cultivation and to provide employment to more units of production factors. The main obstacle to this being political unpopularity. political leaders in the country have to rise above the party interests and group pressures to evolve a national policy in this regard.

The agricultural surplus

Surely, the fundamental task of our fiscal policy should be to mobilise economic surplus and since agriculture happens to be the largest sector in India, a tax policy has to be tailored to tap the agricultural surplus to finance the developmental investment projects. Capital formation in the present stage of our industrial development must come from agriculture. Indeed, agriculture, far from securing investment from industrial sector, has to shoulder the burden of industrialisation. To be able to do so, not only the available argricultural surpluses have to be collected but measures need to be devised to harness all accretions to farmers' incomes. With such savings secured from agricultural sector, the process of industrialisation has to be sustained till the country attains the take-off stage.

The recent experience of all developing countries indicates that there is no need for heavy investments in urban sector. Rather, modest investment in quick-yielding agricultural inputs will result in substantial increases in resources that would be available for investment in other sectors. Once agriculture starts moving ahead, by sheer force of its enormity, it is bound to pull the rest of the economy out of the low-level equilibrium In turn, it would acquire increasing higher levels of productivity when new technology gets disseminated in the entire economy. The overall benefits of the various schemes in agriculture must influence the country's economic development. This could be possible only with an adequate level of mobilisation of rural savings in various ways and forms.

Why tax agriculture?

One such source, and quite significant too, is the revenue from agricultural taxation. In the present

situation of its almost total absence, the country cannot augment resources substantially without squeezing those sections who are already making a sizeable contribution to a point where the whole exercise will start becoming counter-productive. Therefore, while we may not be able to make any dramatic changes for raising our revenue yet it becomes imperative to consider if we are casting our net wide enough. Actually, our resource mobilisation efforts are limited to the urban sector. Direct taxation covers a few hundred thousands in the cities. The incidence of excise duties is much wider and to the extent that sections of the rural population consume manufactured products, some contribution from them trickles into the coffers of the government. As far as borrowings either by the government or industry are concerned, they leave the rural areas almost untouched. In the combined actual tax revenue of the Union and State Governments, the contribution of the agricultural sector is hardly 1.6 per cent. Thus, 80 per cent of the population of the country makes a contribution of only one and a half per cent to the total kitty as against a contribution of 98.5 per cent made by the remaining 20 per cent of the population. It would thus be advisable to treat farm incomes like any other income in view of the constraints on resources. In the absence of a move in this direction, practically the whole of the primary sector continues to be a virtual heaven in India as far as direct taxation goes. The shrewd among the business community and those amongst the tax-evaders have indeed discovered it to be so.

About 15.2 per cent of the total farming population controls 60 per cent of the land holdings in the country. Of the 22 states, only ten have some sort of legislation for levying agricultural income-tax though these are the states that have plantations and estates producing tea, coffee, rubber, cashew, etc. Even in these states revenue accruing to the government is rather nominal. In other States, the crude acreage tax levied many years back has lost its relevance with the advancement in agricultural technology and productivity. The aggregate land revenue in 1984-85 amounted to Rs. 183.67 crore which was only 1.98 per cent of the tax revenue accruing to the States. Obviously, agricultural income, other than that from plantation crops, still remains unexplored in terms of resource mobilisation for our developmental efforts.

Big landlordism

It may, of course, be argued that the bulk of the rural population lives below the poverty line and as such any attempt to tax them would lead to a further depression of their living standards and that in any case, the resources that may be available from this effort would be so meagre as to be hardly worth the labour spent in the exercise. But this is taking a partial view of the situation as many farmers have been able to amass quite an amount of wealth in the wake of Green Revolution and improved productivity made possible by governmental efforts and initiatives. It is important to consider as to why we should not try to tap this source to augment our resources. This section of rural population may be small in terms of percentage of the total rural population, but in terms of number they would not be quite inconsiderable.

It is estimated that a population of about 12 million could easily belong to the high income brackets in the rural sector. And this segment of population is at present either completely outside the tax net or is making only a token contribuion. The government should seriously consider and decide if they should be brought under the purview of the central income-tax or the state tax structure. An additional tax revenue of at least Rs. 50 crore per annum could easily be raised from this segment of agricultural population, involving a very modest incidence of Rs 200 only on each household a year. In fact, our effort should not be limited to only taxing them. They should be motivated to contribute a much larger amount by way of investing in bank deposits, life insurance, unit trust, government and other securities. The total additional funds that might accrue from this section could well be Rs 300 crore a year.

Our faulty tax structure

It is relevant to mention here that the reputation of tax administration has greatly suffered in recent years because of a steep decline in both efficiency and integrity, what with the existing distortions in our tax structure. Those who pay their taxes full or at least in substantial measure cannot but view with mounting dismay the privileged few who seem to be able to evade their obligations and accumulate large arrears while the Government continues to issue dire warnings merely for the record. The total number of assessees has come down to 42 lakhs following the raising of the exemption limit, which warranted the hope that the department would concentrate on the bigger cases. The direct taxes arrears have risen to Rs 1,810 crore, of which Rs. 925 crore relates to earlier years. Of this, 399 defaulters owing more than Rs 25 lakhs each accounted for unpaid taxes of Rs. 357 crore.

Also, there has been a deterioration in the position of direct taxes vis-a-vis the indirect taxes as revenue earners. Their relative contribution to revenue stood at 19.4 per cent and 80.6 per cent respectively for the year 1984-85. By virtue of the constitutional provisions, agricultural income and wealth fall outside the purview of the existing direct tax laws (except in a very limited extent) in spite of the fact that agriculture, by itself, is a major contributor to the total national income, contributing as it does a little less than a half to the total national income of the country. Hence, if the contribution of direct taxes is seen in conjunction with the non-agricultural income alone, then much of the significance of distortions in our tax administration would become apparent.

....Land lack of interest

Since agriculture as a state subject, the Government of India does not have the authority to tax agricultural income or commodities. Article 270 of the Constitution lays down that tax on income, other than agricultural income, shall be levied and collected by the Union Government. However, Article 252 provides that state legislatures can pass resolutions authorising Parliament to pass an Act to regulate taxation of agricultural income and related matters. As such, it is within the powers of the state legislatures to empower the Centre to administer the agricultural income-tax and also abolish the present segregation of income into agricultural and non-agricultural so as to treat all incomes alike. The States have, however, been following a dog-in-the-manger policy by neither enforcing their own agricultural income-tax nor introducing legislation authorising the Union Government to proceed with the rationalisation of taxation of incomes irrespective of whether these are from agriculture or any other activity. At the same time, the Centre has also not been enthusiastic about bringing farm income within its own tax net

We have lost sight of on important fact that deficient investment plagued agriculture in the Sixth Plan. During the Plan period of 1980-85, outlay was 43 5 per cent of the total for agriculture at 1979-80 prices This deficiency has received less attention than it deserves for two reasons First, the widespread belief that annual irrigated area has been expanding at the rate of 2 million hectares or so per annum Second, it is generally known that substantial funds are being pumped into agriculture under various heads. There has also been a sustained hike in support prices for commodities notably foodgrains These two reasons have fostered the belief of relative adequacy of investment in agriculture

Reduce agricultural subsidy

A variety of fairly sizeable subsidies has been flowing into agriculture. For 1984-85 subsidy for fertilisers, irrigation, livestock, rural development, and rural electrification was of the order of around Rs. 4,100 crore at current prices. These subsidies are backed by good intentions like boosting production, raising milk yields, creating assets for poor farmers, and so on. It is, however, not known if the target groups of population intended to be beneficiaries have been getting the subsidies as intended The better off farmers have not put the resources to productive use. The allocation of subsidies tends to be inequitous. For example, farms with water attract the bulk of such subsidies It should be noted that some of these subsidies go to fertiliser and power producers, support their inefficiency and, in turn, raise cost. Subsidies have led to misallocation of resources and retarded growth. There is, therefore, a strong case for raising taxes through a direct levy like the agricultural holdings tax and a hike in indirect taxes as also for reducing subsidy payments. Only then we can hope that the resources in the agricultural sector will improve.

Need for political will

In sum, the premises and principles favouring taxation of farm incomes seem to be incontrovertible. Even as there is progressively and vertical equity in our taxation structure, the exclusion of agricultural incomes from the tax net makes the whole gamut of taxation only horizontal. Consequently, people earning the same income but operating in two different sectors receive a flagrantly different treatment. The discrimination against salaried employees is so manifest as not to go unnoticed. The rich segment in the farming community is as large as in industry. It is as prosperous as the industrial sector. Both state and central governments have been spending a lot on fertilisers, water, power, etc., by subsidising them so that they are made available at economic rates. This generosity has certainly helped the rich farming class in boosting their output. In view of our resource constraints during the Seventh Plan, it is imperative that the gap in revenue is made good not by additional deficit financing but by reducing subsidies. A trade off between loss in indirect taxes and reduction in subsidies would be neutral to revenue collection and prices, but would increase both investment and growth. There is thus no reason why the rich class of farmers should not make their contribution to our developmental efforts. The K. N. Raj Committee had suggested that demands of equity would be adequately met if agricultural income-tax is based on land holdings. An upward revision in the land revenue also should be made as a step towards an agricultural holdings tax. It is high time that states' resources be consolidated and the Centre must muster up its political will for doing so

Rural water supply assistance to U.P.

Uttar Pradesh is to get a Central assistance amounting to sR. 46.15 crore under the Accelerated Rural Water Supply Programme (ARWSP) in 1986-87, out of which Rs. 20.66 crore have already been released. In 1985-86 the state had been sanctioned Rs 46.06 crores under the ARWSP.

The Central Government has approved 8,590 schemes of the U.P Government for providing drinking water to 9,328 villages at an estimated cost of Rs. 69.51 crore during the Seventh Five Year Plan.

Drinking water supply is the responsibility of the State Government, though the Centre provides assistance under the Accelerated Rural Water Supply Programme.

Raising agricultural productivity

(A case study)

Dr. S. K. Jha

In this case study of the development of rural people of the tribal district Hazaribagh (Bihar) the author terms the area as one with deficit in food production and poor capital investment on land and cropping. To salvage the rural economy he suggests a nine-point action programme including substantial investment in agricultural sector, modernisation of farming, intensive cultivation, multiple cropping, increase in irrigation potential, afforestation and effective implementation of anti-poverty programmes.

IT WAS AFTER INDEPENDENCE that the burning problem of amelioration of the tribals and their socio-economic condition caught the eye of the Government and special provisions were made, besides the general scheme of planning for their development. However, these special provisions have been too meagre to bring about any marked development and regeneration of their conditions.

Hazaribag is the divisional headquarters of the North-Chotanagpur division of the state of Bihar. The district of Hazaribag is one of the most backward districts of the State of Bihar as well as of the country. The district may be roughly sub-divided into three sub-regions—Southern, Central and Northern. The principal activity in the Southern region is fast shifting towards industry, while the principal economic activity in the Central and Northern regions is centred around agriculture. The district is studded with a population of 21,98,310 of which the population of scheduled caste is about 4,14,917 and that of scheduled tribe is about 1,98,792 which comes to about 18 per cent and 9 per cent respectively in the 11,165.0 sq. kilometre area. The density of population in the district is 197 per square kilometre and the percentage of literacy is 23.56 (1981 census) as compared to 26.0 per cent of the State.

The economy of the district is predominantly rural and about 88 per cent of the population reside in 3249 villages of the district Only 397 (36.54 per cent) villages are electrified. Agriculture is the mainstay of the population of the district which is evident from the fact that around 83 per cent of the population is engaged in it and 4,14,826 41 acres area is under agricultural use which is approximately 13 per cent of the total area of the district. It is an irony that the district cannot produce enough food for a population of less than 22 lacs of people. According to a survey conducted by the Bank of India in 1981, the agricultural production in the district meets 32.3 per cent of the district requirements inspite of the fact that 83 per cent of the population depend on agriculture. The rural mass is simple, sober and politically less conscious. Strangely enough in the midst of plenty and green background of forest we may see vast tracts of barren land, mud-houses, thatched roof, weak cattle, ill-nourished childern—all symptoms of poverty. Topography coupled with agro-climatic conditions have rendered the district a deficit area in matter of food production.

The district is not connected by rail, as a result of which, tnis town has developed little in the post-Independent era. The central region is conspicuous by the absence of any railway line while the Northern

cgion of the district is fortunate in having a portion of the Grand Chord Line of the Eastern Railway which is 48 Km. from the district headquarters. The district on the whole is, however, well served with a net work of roads.

In this paper an attempt has been made to examine the existing farming pattern and its economic viability. For the purpose of this study the holdings of marginal and small farmers are selected which possess very low yielding potentiality. These holdings are not economically viable as well as technically feasible and comprise 49.32 per cent of the total holdings in the district. The second part of the paper analyses the principal causes of low productivity and its impact on farm economy. Further, the paper suggests new approaches for the agricultural development.

Methodology

The district of Hazaribagh consists of three sub-divisions viz. Hazaribagh Sadar, Koderma and Chatra. There are 24 development blocks in the district. The Sadar sub-division consists of 12 blocks whereas Chatra and Koderma consist of 6 blocks each. To study the above objectives sample farmers were selected from eight blocks of the Sadar sub-division and a study was conducted through a purposeful and short questionnaire. A group of eight farmers—three marginal farmers, three small farmers and two big farmers, were sampled from 16 villages in eight blocks. Thus in all 128 farmers were interviewed. The sampling was made on probability proportion sampling (P.P.S.) method. The results have been put under different heads in the paper after analysing the data.

Those farmers who own land from 1 to 5 acres have been put in the category of marginal farmers and those who own land from 6 to 10 acres are in the category of small farmers in the sample. The big farmers are those who own land above 10 acres but below 30 acres in the sample. The percentage of marginal and small farmers in the sample stood at 37.5 each while the percentage of the big farmers stood at 25

Soil structure

Due to undulating topography and the land being subjected to heavy erosion, the top rich soil has been washed away, and the fertility has been reduced. The northern belt of the district which slopes down from the central plateau region is comparatively rich and fertile being a mean between the alluvial soil of the Indo-Gangetic plane on the north of the district and sandy and rocky in the central plateau region of the district.

Land use

As per land utilisation statistics only 13 per cent of its area is at present under cultivation. The area under forest is 5,27,836 hectares which constitute 47.37 per cent of the total geographical area of the district. The per capita forest area of the district being 0.329 hectares as compared to 0.05 per cent hectare of the State of Bihar. The National Park covering an area of about 50 sq. miles is situated in the central region of the district. The economy of the people is inextricably mixed up with forests as they are distributed almost uniformly all over. Forests and villages occur in succession in this district. There are 5,96,680 acres of fallow land, 98703 acres of wasteland in the district.

Size of land holding

Less than an acre of land is owned by 15.04 per cent of the cultivating house-hold as compared to 21.51 per cent of the rest of Bihar Similarly 1.00—2.40 acres of land is owned by 34.39 per cent of the cultivating household as compared to 26.65 per cent of Bihar. It was thus observed that about 50 per cent of the cultivating households own less than 2.50 acres of land and that the majority of the agricultural holdings are small and uneconomical size. It is interesting to note that the marginal farmers constitute 76 per cent of the total farmers in the district while the small farmers constitute 16.7 per cent of the total farmers in the district, those who own land above ten acres and below 30 acres constitute 6.68 per cent of the farmers. In the district 30 to 50 acres of land is owned by 0.35 per cent of the farmers while the percentage of the farmers owning above 50 acres of land is only 0.17.

Cropping pattern

Out of the total acreage of 4,14,826 acres under regular cultivation only 77,175 acres of area are sown more than once. The acreage of net irrigated area of the district is 34,588 out of which, area under paddy cultivation is 6,846 acres, wheat 3,720 acres, sugar cane 4,325 acres and vegetables 14,779 acres. In this district practically all the cultivable area is utilised for kharif crop. Kharif paddy is sown in 17,378 acres of land, whereas summer paddy is sown only in 415 acres, wheat in 8,032 acres, potato in 4,779 acres maize in 66,809 acres and Marua in 2587.4 acres.

Production trend

Summer paddy, kharif paddy, wheat, potato and maize are the principal crops grown in the district. In addition to it, arhar, marua, barley and gram are also grown. The summer paddy yield per acre is 340 kg (0.34 tonnes) and wheat 600 kg (0.60 tonnes) per acre in 1981-82. The average yield of marua per acre since 1981-82 has been 200 kg. (0 20 tonnes) and that of maize 500 kg. (0.50 tonnes). The production of cash crop is almost nil in this district owing to the lack of irrigational facilities.

Irrigational potentialities

Most of the rivers in the district are rain fed due to the peculiar topography and cannot, therefore, be

very advantageous for irrigation throughout the year. The erratic behaviour of the monsoon in recent years, particularly the failure of Hathia rain in 1958, severe drought conditions in 1966 and late monsoon in 1972 aroused the urgency of providing assured irrigation facilities in the area where agriculture is carried on. As a result of the execution of various schemes it has been possible to provide irrigation facilities only to 34,588 acres out of 4,14,826 acres of cultivable lands. Thus the total irrigation potential created in the district so far is only 5 per cent of the agricultural land available. The highest proportion of the cultivable land is irrigated through 'Bhandaras' 17,488.89 acres followed by masonary wells 12,047.98 acres and tanks 3,410.23 acres. Only 1,607.47 acres of land are irrigated by tube wells and 33.78 acres by canal. Cultivation of rabi crops is confined to the areas where irrigation facilities are available.

Cost of production

Primitive type of agricultural cultivation is being carried on in the district. The investment made in inputs is nominal. The data collected revealed that inspite of so much propogation by the publicity media and block personnels, the coverage by H.Y.V. wheat seeds was only in 4200 acres of the cultivable lands, H.Y.V. potato in 270 acres and use of I.V. seeds in 17,500 acres in 1981-82. Similarly the use of fertiliser of all kinds was only 2,400 tons. There is disguise employment in agriculture. The labour engaged during the cropping season—at the time of sowing and harvesting—was mostly female as well as family labours. This was more evident in the villages the population of which was predominantly tribal. On an average members of a family were on work for 30 days in a season. The cost of agricultural labour is Rs. 12/- per day during 1984-85. The cost of family labours per season comes to Rs. 720 on an average. However, for four months a year, they have no employment worth the name in the central and northern zones of the district. Some seasonal employment is being provided by forest contractors to an insignificantly small percentage of the population. An insignificantly small percentage of the tribals and non-tribals earn their livelihood from procuring fuel wood from forests and preparing char-coal. It was observed that majority of the marginal farmers and small farmers borrowed the seeds from the big farmers on an agreement to repay double the quantity. However, it cannot be denied that some of them buy the seeds from blocks of their respective areas.

Trade practice

There are no regular markets in the district. The district is a deficit area so far as agriculture produce is concerned. However, the survey of the sample farmers showed that 20 to 25 per cent of the disposal of paddy was made for cash in the weekly markets for essential commodities by majority of the marginal and small farmers. The big farmers sell their produce i market. The study revealed that nearly 40 per cen of the produce was marketed just after the harvestir was over. Naturally, therefore, they get Rs. 20 t Rs. 25 per quintal less than the big farmers who sta selling their produce from May and June. It was als noticed that some of the small and marginal farme sell their paddy at a cheaper rate to the big farme in their villages. Moreover, most of the small ar marginal farmers have to return double the quanti of seeds to the big farmers in lieu of the seeds tak by them at the time of sowing. Thus nearly on a average 55 to 60 per cent of the agricultural produ goes out of the hands of the small and marginal fa mers just two months after the harvesting. While each block headquarters godowns of Vyapar Ma dals have been constructed to afford ware-housi facilities to cultivators, these have so far been bo little utilised by the cultivators mainly because t district is a deficit region in agricultural produc Cold storage facilities have recently been made ava able only at Ramgarh in the southern zone and Tilaiya in the northern zone. Gola and Ramgarh b ing rich vegetable belt in the district, there is furtl scope for cold storage facilities.

Problem of employmen

Of the total population of 21,98,310 in the distr about (16 per cent) 3,32,103 reside in urban are The remaining population lives in 3,249 habited v lages in the district. Since the principal activity in t northern and central zone is centred around agric ture, hence for about four months a year they ha no employment. In the mineral belts of the southe region, however, employment as labourers in mi provides only 4 per cent of the total population, opportunity to earn their livelihood. The total n worker population in the district comes to 14,51,1 which includes females doing household work, chi ren, old, decrepit and disabled persons. The ratio worker to non-worker comes to approximately 2:

Conclusic

The study reveals that the bulk of the populat (88 per cent) of the district is rural and that agri ture is the mainstay of the rural population (83 cent)—small and marginal farmers constitute bulk of the peasants (50 per cent) population and group owns small and uneconomic agricultural h ings (2.50 acres).

The majority of the farmers are still sticking traditional cultivation methods. The agricultural te nology has been stagnant for years and the ani power flow has been a constant feature of rural sc of this district. The empire rose and fell but the in villages went on as usual. Quality of land availability of water normaly determine the produ vity but as the study reveals due to undulating to graphy and heavy erosion the fertility of the lan

the district has been reduced and in spite of Government (both Central and States) efforts only in 5 per cent of the agricultural land irrigational potentiality has been created. The big farmers view agriculture as a source of income without any need of new investments except for buying new lands. The production of cash crop is minimal and the production of food crop is meagre. That the district has been rendered into a deficit area in matter of food production. The capital investment on land and intensive cropping is poor and thus the per capita production s also not economically viable.

There is no regulated markets or agricultural markets in the district. Majority of the small and marginal farmers of the district sell their produce in the village at low price to meet their immediate needs. The group of marginal and small farmers are exploited at the hands of the big farmers as well as in the market. Cold storages have been provided here and there but until the vegetable produce increases it is not going to serve any useful purpose. Those who have dependence on agriculture do not find jobs for four months in a year Hence to increase production, the age-old agricultural practices have to be reformed and better strategy for the agricultural development has to be drawn. To provide jobs to the jobless the Government will have to turn the umbra of the rural development programmes like the I.R.D P., NREP, TRYSEM, towards the rural scene more honestly.

Suggestions

The author suggests the following policy strategies for the agricultural development of the district of Hazaribagh :

I. In modern age due to sinkage of arable lands and ever expanding population it has become necessary that substantial investments be made in agricultural sector if the menace of hunger is to be avoided. Modern techniques and mechanisation alone can maximise agricultural production, increase productivity and reclaim less fertile wastelands. Unless the Government makes substantial investments in agricultural sector the district would continue to remain a scarcity area. Mechanisation of agriculture necessitates that the educated youth be employed to manage the modern farms and it creates employment avenues to the educated youth in rural areas.

II. Modernisation of agriculture requires large capital investments in tractors, tube wells, implements, pesticides, fertilisers and hybreed seeds. The saving of poor farmers cannot finance agricultural modernisation. Hence, rural economic resources should be reorganised so that agricultural sector might become a prospective area for investments by financial institutions.

III. Small uneconomic farm holdings should be consolidated into big farm holdings so that they become productive and are able to attract financial institutions for modernisation of the farms

IV. As the majority of agricultural holdings are of small and uneconomical size and considering the poor soil factor obtaining in the district, the strategy to be followed for increasing the production has to be of a great emphasis on intensive cultivation and multiple cropping in irrigated areas.

V. Reclamation of waste lands, soil conservation work and plant protection measures will be the other methods by which the agriculture production is to be stepped up.

VI. As the principal activity in the southern region of the district is fast shifting towards industry it is necessary to give on the one hand, incentive and proper financial assistance to entrepreneurs who seek to establish new industries, the tempo of horticultural, piscaultural and animal husbandry development particularly piggery and poultry on the other hand, has to be stepped up to meet the increasing need of the area. Moreover, vegetable production on an intensive scale establishment of a Government managed dairy farm should also be provided in this region of the district. In agricultural regions of the district there is the need to establish regulated market.

VII. Since most of the rivers of the district are rain fed and cannot be used for irrigation throughout the year, hence, there is the need to increase irrigational potentiality through reservoir schemes, surface percolation wells including big diametre wells, in-take-well schemes along the river bed and lift irrigation schemes. Meanwhile rural electrification programme has to be intensified to cover more villages.

VIII. Afforestation schemes should be intensified to fill in the blank areas within the forests and the tribals should be urged to refrain from 'Jungle kato' movement.

IX. Poverty alleviation programmes like I.R.D.P. and other programmes to supplement the efforts of IRDP like the TRYSEM, NREP, RLEGS, etc., already in existence in the district will have to be implemented honestly so that these programmes may reach the right door i.e. the poorest of the poor. □

Self-employment for the urban poor

The Reserve Bank of India has recently finalised the guidelines for the Self-employment Programme for Urban Poor. The preparatory work for launching the scheme is under way. It is proposed to provide financial assistance through banks to the residents of metropolitan, urban and semi-urban areas for undertaking ventures like rickshaw-pulling, carpentary, vegetable fruit vending, blacksmithy, tailoring, cycle repair shop, shoe-shining, welding etc. The beneficiaries would also be provided subsidy from the Central Government so that repayment burden on them is reduced. □

What ails IRDP ?

Raghunath Jha

This is a case study by the author of the implementation of IRDP in eight districts of Bihar. The objective was to locate lacunae in the effective implementation of the programme and to suggest steps to overcome them. The author here advocates, among other things, more allocation of resources and improvement in the existing infrastructure at the block and village levels so that the objective of uplifting poorest of the poor above the poverty line is achieved.

THE INTEGRATED RURAL DEVELOPMENT PROGRAMME (IRDP) is the single largest anti-poverty programme currently underway in all the community development blocks in the country. It aims at providing income generating assets and employment opportunities to the rural poor for enabling them subsequently to rise above the poverty line. It's target group consists of the rural poor, i.e. marginal and small farmers, agricultural and non-agricultural labourers, rural artisans and craftsmen, including the scheduled castes (SC) and scheduled tribes (ST) families.

The IRDP was initially launched in 2300 selected community development blocks in the country in 1978-79, but with effect from October 2, 1980, it was extended to all the blocks. The 7th Plan proposes to give it a wider base by integrating it more effectively with agricultural and other rural development programmes. The IRDP has had its share of both criticisms as well as praises. Generally, it has been criticised for its faulty implementation and praised for its novel strategy, which is a synthesis of the cluster approach, antyodaya approach and packages approach. These three approaches have been tried and found successful in earlier agricultural and rural development programme as well.

Objective of the study

If we were to make a critical appraisal of the performance of IRDP in the state of Bihar, the statistics will provide clear indication that the programme has not been able to make an adequate dent in the rural areas and hence has not been able to alleviate poverty to the desired extent. This paper based on the outcome of a project on the evaluation of IRDP, attempts at examining the gaps in the implementation of the programme and pinpoints the factors which have been acting as a detriment in the successful launching of the programme. On the basis of certain suggestions, the paper will also try to extend certain remedies in policy prescriptions which will be helpful for future line of action.

Another important objective is to create a certain degree of awareness among those who are responsible, both at the state as well as at the district level, to make the programme reach the grass-roots.

Method

The paper is based on the observation gathered from eight different districts of Bihar, namely Muzaffarpur, Katihar, Patna, Arrah, Bhagalpur, Monghyr, Gaya and Chapra. Since the project by the Concurrent Evaluatin of IRDP was sponsored by the Ministry of Agriculture, Department of Rural Development, Government of India, the selection of these districts has been a prerogative of the Ministry. The districts are, however, different from each other in terms of topography and other socio-economic indicators. They are also geographically spread over the different regions of the state.

From each district two blocks were again selected by the Ministry for the purpose of evaluation and four villages were selected from each block. From two villages ten current beneficiaries were selected and from the remaining two villages ten old beneficiaries were selected.

Each beneficiary was given a questionnaire formulated for the purpose of evaluation. In the process of interaction with the beneficiaries, discussions with the block, bank and DRDA officials on the different processes involved in the implementation of IRDP an interesting picture of the performance of IRDP emerged which is being presented in this paper.

Observations

Selection of beneficiaries

It is expected that the selection of the beneficiaries is to be made either by the V.L.W. (village level worker) or the Panchayat Sevak on the lines of Antyodaya i.e. selecting the poorest of the poor first. But in actual practice, however, the Antyodaya principle is not strictly followed. This is due partly to some genuine difficulties in following this principle and partly due to some deliberate defaults on the part of V.L.Ws. and Panchayat Sevaks. One of the genuine difficulties is that the poor households are unable to identify the areas of their interest and thereby select schemes under the IRDP which would enable them to rise above the level of poverty by generating incremental income through the assets provided.

Another difficulty is the maintenance of the assets. There is need for identifying and formulating projects that would suit the managerial staff of the banks and risk bearing ability of the poorest of the poor.

It was found that the V.L.Ws. have a lot of scope for arbitrary action in selecting the beneficiaries. Lack of income generating norms for various activities and lack of rigorous scrutiny by the block level and district level authorities of the estimates of income prepared by V.L.Ws., lead to a faulty selection of beneficiaries. Although, some flexibility in selection procedure is desirable, scope for corrupt practices needs to be minimised. The state government should fix the income generating norms for various activities and ensure intensive and rigorous scrutiny of the household income estimates prepared by the V.L.Ws.

There is need for training of V.L.Ws and extension officers like block agriculture officers and animal husbandry officers, as regards income estimation. Also there is need for the rationalisation of the existing reward and promotion systems. V.L.Ws. and Panchayat Sevaks linger in the same capacity for 15-20 years, before becoming eligible for promotion to the post of extension officers. The extension officers hardly have prospects for promotion. In the absence of many of the basic and civic amenities of life in villages where they live and work and with uncertain promotion prospects, the V.L.W's are not expected to do a better job that what they have been doing at present.

As per the Government of India instruction, Gram Sabhas are to be involved in the process of selection of beneficiaries. Although the involvement of Gram Sabhas in the process of selection of beneficiaries seems to be desirable in the sense that it ensures public scrutiny of the selection made by block functionaries, it, nevertheless, creates avenues for political intervention in the selection process, which not only lead to unnecessary delays and disputes, but also largely results in the faulty identification of the beneficiaries.

The poverty line set up by the Government of India in 1979 and an annual income of Rs. 3500 for a family of five members has become out dated. For neutralising the effects of inflation the definition of poverty line has changed in the 7th Five Year Plan. Now a family having annual income of Rs. 6400 or less is considered to be a family below the poverty line. The cut-off for identification of the families for assistance would be Rs. 4800|- annual income per family. In order to ensure that the poorest of the poor get the assistance first, it would be ensured that the families with an annual income level up to Rs. 3500|- are assisted first. After the report of assistance provided to all families having income below Rs. 3500|- has been submitted by the blocks to the DRDA, it is the job of the DRDA to verify the situation by issuing public notice and give sanction to the block to assist the families in Rs. 3501-4800|- income bracket first and subsequently those in the Rs 4801-6400 income bracket.

Provision for loan and subsidies

The IRDP beneficiaries are assisted through bankable projects which are financed partly by bank loans and partly by subsidies. The present guidelines stipulate subsidies at different rates ranging from 25 to 50 per cent of the capital cost of the scheme subject to a maximum of Rs. 3000|- in non-DPAP and Rs. 4000|- in DPAP areas ; for the tribal beneficiaries the limit is Rs. 5000|-.

During field survey it was noticed that a very large number of beneficiaries did not receive adequate financial assistance, and hence could not attain the critical minimum level of investment necessary to generate sufficient income for them to rise above the poverty line. But now provision has been made to give supplementary assistance to the families assisted in the sixth plan to cross the poverty line.

It is interesting to note that in Arrah district, in the absence of prior authorisation of subsidy by the DRDA, financing institution disbursed subsidy along with bankable loan amount. As a result, the burden of the interest on loan fell on the beneficiaries.

It has also been noticed that the bulk of loan applications are rushed to the banks in the last to or three

months of the financial year. This places unavoidable burden on both the bank as well as field functionaries. It would, therefore, be desirable to ensure regular flow of applications to banks throughout the year, keeping in view the seasonality and availability of assets.

According to the guidelines laid by RBI and NABARD, loan applications sponsored by BDOs must be disposed of within a fortnight. In actual practice however, it is found that in most of the cases banks take more than two months in disposing of the loan applications. If some cases are rejected, reasons for rejection are not recorded clearly on the application forms by the banks although the RBI has given a clear indication for this in its guidelines.

Procurement of assets

In different districts of Bihar, purchase committees have been constituted at the block level comprising the beneficiaries, a representative of each of the agencies, the financing institutions and the department concerned to make assets available to the beneficiaries. However, in most of the cases, assets are purchased by beneficiaries alone. This is because it is only rarely that all the members of the committee are available for the job, when required. This procedure does not seem to be practicable. Besides, there have been numerous cases where no assets are purchased at all, but certificates to that effect are issued by the members of purchase committee in lieu of bribe. There were some cases where sub-standard assets particularly rickshaws are supplied at higher prices in comparison to the market price, by dealers authorised by banks or DRDAs.

There is need for streamlining the purchase procedures so as to minimise the incidence of corrupt practices. The Central government has already issued instructions to the state government that each and every asset procured with IRDP assistance should be physically verified.

Backward and forward linkages

After procuring the income generating assets, the beneficiaries need considerable assistance in terms of supply of raw materials, marketing support, technical advice, training etc. It is only then that the beneficiaries can be able to realise the potential benefits from the assets.

It has been observed that in the case of milch cattle there is usually a steep decline in the yield of milk after its procurement The reasons are non-suitability of milch animals in the local area, lack of adequate and nutritious feed, neglect in the care of cattle, etc. Lack of assured marketing facilities at remunerative prices for the product has also been another serious lacuna in realising the full benefits from the assets.

Monitoring of IRDP programme

Monitoring of the physical and financial progress of the IRDP in the districts is done through quarterly and annual block level reports, and the monthly district level reports. Besides this, the progress and problems of the programme are also reviewed by the BDOs in the fortnightly meetings with the VLWs and in the monthly meetings with bankers.

The DRDAs are now providing an indentity-cum-monitoring card or Vikas Patrika to each beneficiary so as to use it as an aid to monitor its socio-economic development. The importance of Vikas Patrika can not be overlooked. If the Vikash Patrika is thoroughly analysed it will not be an exaggeration to say that the Vikas Patrika is the pivot around which the performance of the IRDP clusters. It is the only source of link between authorities who are supposed to implement IRDP at the grass root level and the beneficiaries who are supposed to reap the fruits of this programme.

The link between the authorities, on the one hand, and the beneficiaries, on the other, is not, unfortunately being maintained at all. In none of the districts (Muzaffarpur, Katihar, Bhagalpur, Monghyr, Gaya, Patna, Arrah and Chapra) so far visited, have the block officials distributed the Vikas Patrika. The few cases in which it has been distributed, it has not been filled in properly and is not kept updated. In fact, none of the beneficiaries even has an idea of what Vikas Patrika is all about. As a result, there is no follow up on the scheme given to the beneficiary.

The most important function Vikash Patrika could play, if properly distributed, would be to create a sense of awareness among the beneficiaries. At least through the informations in this booklet, they would know where they stand, how far they could go, and how to go about their way.

Now, the question arises as to why Vikas Patrika is not distributed among the beneficiaries in the State of Bihar, as in a few other States. We can list many casual factors responsible for non-distribution of Vikash Patrika. First, the block officials want to avoid regular visits to the beneficiaries. Second, they want to avoid unnecessary harassment of interacting with the beneficiaries and convicing them of the usefulness of IRDP. Third, they do not want to create awareness among the beneficiaries, so that their chances of getting the share from the loan amount are not lessened.

Conclusion

Much of the failure of IRDP can be traced to the difficulties which hinder their effective implementation. Implementation of IRDP deserves much more resources and attention than what it has received so far. Implementation can be improved only if those who are responsible for it are reasonably well paid, appropriately trained and sufficiently motivated. There seems to by very little scope for improving the implementation of IRDP with the existing infrastructure at the block and village level and the present compensation rates ☐

Administered pricing : A budget by instalment!

Dr. Amar Nath Dutta

The issue of administered pricing has assumed a pivotal importance. Volleys of questions have been raised on the method of raising prices of core commodities in this way outside the Budget. Apart from the parliamentary decorum and fiscal convention, which are the basic foundations of a democratic country, this frequently used device of supplementary budgeting, according to the author, is fast losing its teeth and will appear to act at cross purposes with the cherished ideals of promoting monetary stability and pursuing anti-inflationary policies of growth.

THIS ARTICLE SEEKS TO highlight some basic considerations regarding administered Pricing as well as the rationale of pricing strategy and the prospects of wider application of this technique through the functional impact that has brought to bear on the economy. A recent study by the Reserve Bank of India on the impact of administered prices on wholesale price level shows that during the 14 year period from 1970-71 to 1983-84, the rise in administered prices constituted as much as 29.8 per cent of increase in the wholesale prices. Sector-wise, the petroleum products took a lion's share with 10.9 per cent, closely followed by iron and steel group and, electricity with a tally of 5.3 per cent and 2.7 per cent, respectively. Broadly, the conclusion is drawn that while wholesale prices rose by 9.5 per cent during the period under reference per annum, the administered prices, with a weight of 14.9 per cent in the wholesale price index rose annually by 13.7 per cent.

It's inflation booster !

The comparison is quite obvious One can easily go to such a length as to infer that only half of the rise, say nearly 47 per cent of the rise in wholesale price could have been occasioned by the rise in the administered prices. In other words the Government's decision to resort to a hike in administered prices in reality stroke the fire of inflation which the government as the central policy maker is eager to put out. The Budget this year has been hailed a soft one with no major pricks perhaps in the hope that things will settle down before any radical police decision is taken. More so, because the sudden hike in all petroleum products effective from February 1986 had to be assesssed in its impact although the government mallowed it with a further modification in such duties subsequently. Without going into the ingenuity of this strategy, it can be hailed that not much can be accomplished through such hasty fiscal expediencies when the Long Term Fiscal Policy brought to bear on the government the imperative for outlining a long term pricing policy for the public sector industries with the unassailable argument that such hikes provide the necessary spurts to price increases through cost-push impulses. While both the arguments are strong enough to contest the administrative decisions behind certain price hikes, more important is that of viewing it as an intervening factor in the effort to maintain monetary stability to the extent possible. If we cast a glance on the pricing formula enunciated in this contest, it will become obvious that almost the same pattern is being followed every year for the last

3 years or so In November 1983, the government decided to hike the price of coal followed by a price rise in other agricultural commodities like rice and sugar and similar price rises on essential commodities in 1984-85, particularly oil, coal, steel, cement and fertilizer where a spiralling price rise has become quite evident. Pointing to the need for a selective yet vigilant approach in formulating pricing policy, a Reserve Bank report had earlier observed through a recent study that in order to retain monetary stability, there should be a rigid framework for ensuring the same from time to time.

Public sector, belies hopes !

In the current railway budget, though, the country has been spared a hike in railway freights and fares to a serious extent, the thrust has been on an intensive capacity utilisation in the public sector enterprises which are viewed as a strong pedestal of the economy. In fact, it remains an enigma to note that despite all sorts of assistance and exhortations, the public sector which had to contribute 53 per cent of the plan outlay tragically fell behind with a net contribution of 34 per cent even after 2 years of the starting of the Seventh Plan. Equally, the amount of massive deficit in the Budget has become a very disturbing indicator and wildly unpredictable in nature. The Plan documents reveal a total amount of Rs. 14,000 crores as probable deficit during the 5 years of the Seventh Plan while during the first 2 years the amount of deficit has struck a figure of Rs. 8000 crores. Juxtaposed against this, is the steep increase in consumer prices in the course of a single year, reaching at 7.5 per cent against 4.3 per cent in the corresponding period of the previous year. The table laid below will help us to make an immediate assessment in this regard :—

Table 1
Variation in Price Index

Year	Wholesale Price Index	Consumer Price Index
1979-80	21.5%	12 4%
1980-81	16 7%	12 6%
1981-82	2 4%	8 8%
1982-83	6 4%	9 9%
1983-84	9 3%	11 2%
1984-85 (as on 8-2-85)	5 4%	4 3%
1985-86 (as on 8-2-86)	3 4%	7 5%

Before the Budget was laid, the Economic Survey which was presented before the Parliament emphasised the importance of avoiding large increases in the price of foodgrains, sugar and other important consumer items and also in vital industrial inputs of power, coal and steel to prevent the nation's economy becoming high-cost. The Survey echoed the Long Term Fiscal Policy in stressing the need for clearly formulating a rational pricing policy and to ensure price stability against which to view the overall national supply—demand position and to take stock of the severe draft on resource by repaying the IMF debt, incurred earlier. Public sector industries enjoy both subsidies and government protection which present a typical situation where short term benefits can be obtained through an increase in administered prices. But such inexpediencies have today generated a creeping inflationary trend which we are still battling against and which defies any methodical, integrated approach. The solution in the instant case therefore lies in making the public sector industries more operative and viable, more commercial and more performance oriented so that the need for pretending any surrogate for their gross failings never arises through naive policy decision.

Policy application

After the select price hike in 1983 which also en meshed an increase in cement price by Rs. 52 pe tonne, the government announced another bout o price increase of 25 per cent in January, 1984. Th instant effect was deficits in Coal industry in th public sector without probing its necessity of review ing its impact on the user industries. Even the Plan ning Commission estimated that this 25 per cent hik will directly cause a cost escalation of Rs. 70 crore in power, Rs. 34 crores in steel, Rs. 14 crores in rail ways and Rs. 6 crores in fertilizer. This was not heed ed to. So once this indiscriminate intervention c government administration in pricing is let loose, i has been fast losing its direction in a growing era c intermperate decision making. Unfortunately, whil rising capital output ratio in the public sector unit reflects the poor productivity of units concerned, th urgent requirement is that before making any furthe investment in those units, a performance appraisal b made first and the report placed before the Publi Accounting Committee (PAC) which would conside whether such claims be forwarded to the estimate committee at all. For one thing, enterprises which a persistently inefficient should not get any proof b secured price rise at frequent intervals which merel perpetuate production inefficiency and re-envigora cost push impulses in a state of cascading inflation

This leads to an emergence on an ostracised a minstrative decision making which defies all the es ablished logic and custom of cost price decision ma ing based on the lowest cost and optimum utilisatic principle. Administered pricing policy directed at pr tecting the inefficient units in the public sector mak the environment least efficient and least competiti thus reducing the normal forces of competition to a apocalypse. A little analysis will make it more clea

Table-2
(April '83—Jan '84)

Commodities	Percentage weight	Percentage rate of change in prices			
		1980-81	1981-82	1982-83	1983-84
A. Direct Administered Prices	16	25	8	5	5
B. Indirect Control Prices	28	15	—5	7	14
C. Others	56	13	4	5	6
All commodities	100	17	2	6	10

Normally, commodity prices are fixed by average sts, marginal cost concept being a micro affair and such, are not very much actual cost oriented. On e other hand, administered prices are based on re- mmendations of the Bureau of Industrial Costs and ·ices (BICP), Agricultural Prices Commission PC) and a few other statutory bodies. The working rmula for the purpose is to consider actual costs of oduction, remunerative rate of return on capital d some allowances or disallowances for such policy ctors as inter-regional and inter-sectoral growth and rity. In practice, however, the BICP has to base s study on samples of cost return obtained from all pes of units (which respond) with appropriate eighing structure but in the absence of any statutory nding, such data furnishing are not compulsory for l units and the tragedy is that hardly any return is otained from the more efficient units. Thus cost is timated on a simple average basis where the rule of umb mostly prevails with an inherent upward bias. his over estimation again is easily reflected in a igher recommended price than what is warranted. his further precipitates a cascading effect on the ost structure through inter-unit and inter-industry teraction, since all the indices are not equally effi- ient. In effect therefore, two immediate adverse ffects follow, first, profit margins of relatively effi- ient units are unduly inflated and secondly, and what more serious, inefficient units in the public sector ecure a longer lease of life because of the protection iven to them through steep irrational increase in ad- ninistered prices. The bane of the whole pricing xercise is that it directly helps a mushroom breed of the most inefficient units which should be closed mmediately in the greater interest of the economy. And for subsidising all these loss-making units, not nly the non-Plan expenditure is mounting up, the d-hoc exercises in sudden unsolicited administered price hikes have become overbearing akin to in- ducting a poisonous narcotic to a long time drug ddict. Industrial sickness multiplies and the white lephant in the public sector becomes a gymnast.

The Seventh FYP professes the need to achieve a ow-cost efficient economy with the two basic pre- nises that resources have to be optimised and the opportunity cost kept very low assuming an intensive utilisation of scarce resources in all segments of the economy. This lesson has been monitored to the coun- try through the pre-Budget Economic Survey which has been consistently pressing the need for having a low cost economy every year. In 1983, the Survey drew particular attention to increase in a number of administered prices in such vital areas as coal, elec- tricity, and steel, in the apprehension that a free- wheeling of price tags in all these crucial infrastruc- tural industries will blow off a syndicated price rise in almost all important commodities. Similar advice was sermoned for the next couple of years and in 1986, while the rates of inflation measured by the cur- rent year's wholesale price index stands about 3 per cent (a little more), for consumer price index this has increased by 7.5 per cent (Table—1). This again proves why the public statements are taken at face value only and a massive public discontent sparked off when there was another round of hike in admi- nistered prices recently. The Survey this year makes a frank admission of the 'legitimate concern in the country about the impact of changes in administered prices on the inflationary situation' because of the obvious impact on the existing cost price structure in the economy.

A controversy again rolls up on the nature of price movements registered in the economy during the past few years and the happy-go-lucky deductions made on a priori basis. If some stability was gained at a lower level of fluctuations in wholesale and retail prices during 1982-83, because of a balanced ap- proach in both pricing and liquidity creation and also because of the fact that a good performance of the economy made it possible to absorb costs to a great extent, this was quickly reversed in the following year though some stability was against restored only to be disturbed soon in the current period (1985-86). Nothing therefore can justify any act of fiscal expe- diency or risk taking. It was indicated in the LTFP that the Centre's Budget deficit may remain at 1.2 per cent of GDP in 1986-87 (which is below 1.3 per cent this year) and may average at 0.1 per cent for the Plan period This is very much above the level of the deficit assumed in the Seventh Plan Draft for there may not be other seemingly available alternatives left. But considering the realities the Finance Minister had made his intentions felt in regard to administered prices and if the current trend is a go-as-you-like it indicator, then nothing holds the Finance Minister from raising Plan resources in this way in preference to price stability which is clearly non-co-terminus with the stated growth objective. As a poignant reference, the fiscal policy statement (LTFP) overtly indicates the government's intention to take steps "to ensure that the pricing policies of the public sector under- takings are based on economic costs at *normative* levels of efficiency". In this context, another jerk of the administered move surprised many Almost

(Continued on page 29)

Why this growing industrial sickness ?

Sanjay Baijal

Industrial sickness in our country is gradually assuming alarming proportions. The Sick Industrial Company Act, 1985 is a serious step taken by the Government to tackle this problem. But here the author points out that due to its restricted scope and defective contents this Act is not a fool-proof measure. The Government should therefore enlarge the scope of present Act to cover ancillary and small scale units also irrespective of their organisational patterns. He feels the gravity of the problem calls for a major surgical operation involving harsh decisions.

ONE OF THE MOST baffling problems which the nation faces today is the sickness of Industrial units It has been rising sharply and having far reaching repercussions on the economy including the agonising rehabilitation of the workers who are rendered thereby jobless This is the price the country has to pay for industrialising the economy. Industrial sickness has become a matter of grave concern for the Government and nation on account of the blocking of huge funds in sick units This has adverse effect on the profits of the banking and the financial institutions.

In this paper an attempt has been made to examine

(i) the criteria for identifying the sick industrial units ;

(ii) their incidence in terms of both region and industry ;

(iii) various factors accounting for the emergence of this phenomenon ; and

(iv) various remedial measures adopted by the Government to curb the ever rising trend of industrial sickness in the country and eventually suggest more effective remedial steps.

Identification of industrial sickness

Prior to the enactment of the Sick Industrial Companies Act, 1985 an industrial unit was adjudged as a "Sick Unit" (as per the norms accepted) if following symptoms are present in it :

(a) If the company has negative working capital i.e. if its current liabilities and borrowings are more than the current assets and it continues to incur loss ;

(b) If the unit incurred cash losses for last one year and is likely to incur cash losses in the current year as well as in the following year. By cash loss is meant the loss as computed without providing for the depreciation ,

(c) If the cash inflow of the unit is less than the operational commitment, and is inadequate for debt servicing i.e., if the profit after meeting expenses is equal to or less than the interest liability ;

(d) If the cumulative loss of the unit exceeds the capital and reserves.

As per the provisions of the aforesaid Act a sick industrial company is now characterised as sick (being a company registered for not less than 7 years) if it has at the end of any financial year accumulated losses equal to or exceeding its entire net worth and has also suffered cash losses in such financial year

and the financial year immediately preceding such financial year. By net worth is meant the sum total of the paid-up capital and free reserves i.e. those reserves which are credited out of the profits and share premium account excluding reserves credited out of revaluation of assets, write back of depreciation provisions and amalgamation. Sickness of an industrial unit usually starts with the gradual erosion of its liquidity and deteriorating standards of maintenance which accelerates the wear and tear of the existing assets and leads the units to the state of operational thrombosis, and if allowed to continue further, leads to the insolvency and liquidation of the unit.

Incidence of industrial sickness

The phenomenon of industrial sickness has assumed epidemic proportion covering a formidable number of large, medium and small sized units. According to a repor on industrial sickness prepared by the FICCI there were 491 large, 1256 medium and 7836 small scale units which were sick at the end of 1983. The outstanding credit from both banks and financial institutions locked up in these sick units amounted to an awesome figure of Rs. 3778.3 crore. The following table reveals the incidence of industrial sickness in the large units located in different parts of the country.

TABLE 1

Region-wise position of large sick Industrial Units (at the end of Dec 1983)

State/Union Territories	No. of Units	Amount outstanding (Rs. in crore)
1	2	3
West Bengal	112	467 06
Maharashtra	100	461 48
Karnataka	29	176 47
Gujarat	45	170.82
Tamil Nadu	44	183 31
Andhra Pradesh	19	40.98
Bihar	13	42 02
Haryana	12	30 14
Rajasthan	7	39.62
Madhya Pradesh	20	62 98
Orissa	4	23 15
Uttar Pradesh	54	202 19
Kerala	16	81 79
Punjab	5	8 72
Assam	2	2 02
Delhi	1	0 88
Pondicherry	3	8.33
Goa	5	12.37
Total	491	2014 33

It is clear from the above table that the highest incidence of Industrial sickness is prevalent in West Bengal followed by Maharashtra, Tamil Nadu, U.P., Karnataka and Gujarat. These six states taken together had 384 sick units out of total number of 491 units as on Dec. 31, 1983. The amount of outstanding credit blocked up in these units stood at Rs. 1661.31 crores which is about 82.5 per cent of the total outstanding credit of 491 units. Industry-wise incidence of industrial sickness reveals that the highest concentration is in textiles (128 units), followed by engineering and electricals (113 units), iron and steel (39 units), sugar (44 units), and Jute (37 units). These five industries alone had 361 sick units to their lot out of a total figure of 491 units.

Causes of industrial sickness

Industrial units are susceptible to sickness due to a number of reasons such as negligence, ignorance, inefficiency and lack of managerial virility to withstand the uncertain competitive environment. The main causes of industrial sickness might be classified into two broad categories, i e. internal and external. The internal causes of industrial sickness include inter-alia the following .

(i) Choice of wrong location .

(ii) Underestimation of capital cost.

(iii) Wrong estimation of the demand ;

(iv) Delay in implementation of the project and resultant escalation in the cost ;

(v) Lack of adequate financial and cost control .

(vi) Managerial deficiency and lack of goods and effective planning by the management ;

(vii) Sudden disappearance of the market due to the emergence of better and cheaper-substitutes ;

(viii) Militant labour leadership ,

(ix) Liquidity problems ;

(x) Unforeseen competition ,

(xi) Lack of proper resource management ;

(xii) Tardy debt collection ;

(xiii) Improper product mix , and

(xiv) Product obsolescence.

The external causes of industrial sickness include:—

(i) Faulty government policies regarding production, pricing and distribution;

(ii) Lack of adequate essential inputs including raw material, power and transport;

(iii) Lack of public sector investments;

(iv) Demand recession;

(v) Lack of working capital;

(vi) Surplus labour;

(vii) Adverse industrial relations;

(viii) Natural Calamities.

Remedial measures adopted by the Govt.

The Govt. of India has adopted various measures from time to time to curb the ever growing menace of industrial sickness. In early seventies, the Government toyed with the idea of allowing healthy units to take over sick units on certain condition. But this scheme failed to yield the desired result. Soon after it was realised that Banks and financial institutions which lend funds to industries should be in a position to know when a unit is about to fall sick but they too could not do much to prevent "sickness". Then a sick industrial undertakings cell was set up in the Reserve Bank of India to function as a clearing house for information relating to sick units and to act as a coordinating agency between the Government and financial agencies with the sole object that the cell would be able to tackle issues relating to industrial sickness. It is claimed by the Government that cell has been closely monitoring the Bank's performances in identifying sick units and taking remedial action. However, these measures also did not work successfully as the sickness increased in both depth and width in the industry. Thereafter a standing coordinating committee was set up by the Reserve Bank of India to consider the issue relating to coordination between commercial banks and term-lending institutions on an "On-going basis". Besides, a special cell was set up within the rehabilitation finance division of the Industrial Development Bank of India (I.D.B.I.) for attending to references from Banks in respect of industrial sickness Various guidelines were also issued by the Reserve Bank to the other Banks for the attention and timely support to the viable sick units and small scale industrial units. The Government also set up the Industrial Reconstruction Corporation of India (IRCI) in April, 1971 to function as a credit and reconstruction agency for industrial revival and rehabilitation of sick and closed industrial units. It was later on converted into Industrial Reconstruction Bank of India on March 20, 1985 functioning as the principal credit and reconstruction agency for the revival and rehabilitation of the sick industrial units.

Recently the Govt. has enacted the Sick Industrial Companies (special provision) Act, 1985 which intends to identify the symptoms of industrial sickness in early stage and also provides for suitable machinery to tackle their problem in a proper manner. The chief features of the Act are as follows :—

(i) Application of the legislation to the industries specified in the First Schedule to the Industries (Development and Regulation) Act, 1951, with the initial exception of the Scheduled industry relating to ships and other vessels drawn by power, which may, however, be brought within the ambit of the legislation in due course ;

(ii) Identification of sickness in an industrial company, registered for not less than seven years, on the basis of the symptomatic indices of cash losses for two consecutive financial years and accumulated losses equalling or exceeding the net worth of the company as at the end of the second financial year ;

(iii) the onus of reporting sickness and impending sickness at the stage of erosion of 50 per cent or more of the net worth of an industrial company is being laid on the board of directors of such company, where the Central Government or the Reserve Bank is satisfied that an industrial company has become sick. It may make a reference to the board, likewise if any state government, scheduled bank or public financial institution having an interest in an industrial company is satisfied that the industrial company has become sick, it may also make a reference to the Board ;

(iv) establishment of board consisting of experts in various relevant fields with powers to enquire into and determine the incidence of sickness in industrial companies and devise suitable remedial measures through appropriate schemes or other proposals for proper implementation thereof ;

(v) constitution of an appellate authority consisting of persons who are or have been Supreme Court Judges, Senior High Court Judges and Secretaries to the Government of India, etc. for hearing appeals against the orders of the Board.

The sick industrial Company Act, 1985 is, no doubt, the first serious step intended to tackle the problems of industrial sickness. However, this Act in its present form and content suffers from following shortcomings. First, its scope is restricted to industrial large companies only as it does not apply to ancillary and small scale industrial undertakings. Besides, industrial units owned by partnership firms or sole proprietors are also excluded from the purview of this Act. The menace of Industrial sickness is not the exclusive concern of the Corporate sector alone and as Such it would have been in the fitness of things had the Govt, drafted a comprehensive legislation covering all industrial units irrespective of their pattern of organisation and ownership.

Secondly, the Act provides that it would be the responsibility of the management to inform that the concerned industrial undertaking has gone sick if its net worth is eroded by fifty per cent. In this connection, it might be pointed out that the Act does not

specify as to whom the management will report ? Will it report to the financial institution or shareholders or to the trade creditors ? It is also not clear what shall be the media of reporting ? Will it be reported through the newspapers or through the annual reports submitted in the annual general meeting ?

Thirdly, the Act does not also specify the base date with reference to which the erosion in the worth of the industrial undertaking is to be compared for identifying the issue whether the undertaking has shifted to the sick ward. This has to be clearly mentioned in the relevant clause for identifying the sickness criteria.

Fourthly, the Act provides that a separate Board for Industrial and Financial Reconstruction shall be set up to look into the details of sick units and take suitable measures for their rehabilitation. At present all financial institutions are having soft loan schemes for the potentially viable projects. These loans are given at slightly lower rate of interest and softer terms than the prevailing rates for the normal projects. It is yet to be clarified whether the new Board shall usurp the entire rehabilitation role of the existing financial agencies. In order to avoid overlapping of responsibility of the new Board vis-a-vis the financial institutions, more particularly the Industrial Reconstruction Bank of India, it is urgently needed to specify the role of the Board in such a manner as does not jeopardise the effective functioning of the rehabilitation wings of the financial institutions.

To sum up it might be concluded that the problems of industrial sickness in our country has gone out of proportion in terms of both the size of units involved and funds invested therein. The recent legislative measure introduced by the Govt. reflects the anxiety and seriousness of the Govt. to tackle the problem in a systematic manner. But as has been observed earlier the Sick Industrial Companies Act 1985 is not a foll-proof measure because of its restricted scope and defective contents. It is high time the Govt. should enlarge the scope of the present Act so as to cover ancillary and small scale units also within its purview irrespective of their organisational patterns. The gravity of the problem calls for a major surgical operation involving harsh decisions. Any legislation, however well-intentional it may be, by itself can not do the magic. It requires all segments of the society to put their shoulders to the wheel thereby ensuring its effective implementation which would, in turn, tend to check the growing menace of industrial sickness in the country □

(Cont. from page No. 7)

category. In other words, the scope for direct taxation of agricultural income is very much linked to the adequacy of irrigation facilities. In that case, will it not be better if tax is linked to provision of irrigation ? One may consider a scheme for a graduated tax on irrigation which exempts farms below a certain size (which will vary from region to region) and whose rates increase as size of farms increases. This also calls for an immediate review of the prevailing policy of subsiding irrigation irrespective of size of holding so as to ensure that the large farmers do not get the subsidy. Irrigation and taxation should go together. This coupling will be helpful from the point of view of tax administration also. The scheme of agricultural taxation may, therefore, be confined in the beginning to well established irrigation command areas having assured irrigation like the green revolution belt of Punjab, Haryana and West U.P. But the political feasibility of introducing such a measure in this region appears doubtful at the moment.

The emerging rural scenario is also characterised by a tendency among large farmers to take up non-farming business as additional sources of income. These include ownership of highway petrol pumps, cinema houses in small towns, buses, money-lending, government contracts for building of local roads and buillings, agro-processing industries, etc. These farmers generally have a link with some nearby small or medium towns. There is no reason why such farmers who are generally the most affluent in rural areas should not be brought within the tax net. And it would be less difficult to tax them because of their urban contact and quasi-urban base. Taxation of such farmers should receive priority in any scheme of rural taxation.

Another characteristic of the emerging rural scenario is the tendency of the rural rich to increase their consumption of non-traditional (including luxury) goods produced in urban areas. This indicates considerable scope for indirect taxation provided the commodities are carefully selected. As in the case of urban areas, indirect taxation is likely to emerge as the main source of taxing the rural rich also. □

Universal immunization by 1990

The whole of the country will be covered under the Universal Immunization Programme by 1990. It is proposed to bring 30 districts in 1985-86, 60 in 1986-87, 90 in 1987-88, 120 in 1988-89 and the remaining 112 districts in 1989-90 under the programme.

(continued from page 23)

preceding the announcement of a petroleum price hike, fertilizer prices were jacked up at a sudden gush, with the defensive logic that the mounting subsidy burden on fertilizer was too much at Rs. 2,000 crores to bear with and that this had to be cushioned through this price rise It is equally interesting to note here that this decision was contrary to an expert advice given by the Food & Agriculture Organisation (FAO), a U. N. body, that such steps would be "retrograde" enough. Again, due to a strong reaction within the country, the government had to make a partial retreat subsequently by reducing the extent of price rise of petroleum products announced earlier, which vindicates the government's naive thinking of the consumer's needs and the user industries' approach in this regard.

Summing up the whole issue, it becomes evident that the need for raising resources remaining an imperative one at any point of time, two things have to be observed as ground rules. The first is the maintenance of a code, meaning thereby that there should be a reasoned conduct in administering the causes and the course of price rise, the timing and an awarness on the part of the public as well as the concerned link with the user industries. In all fairness, budgeting by stages has to be avoided at all costs. Merely to "justify such acts" as a fiscal contrivance outside the budget does not help matters. The Prime Minister himself observed that administered price increases must not be resorted to as a strategy to shelter the lapses of loss-making units. This view is hundred per cent correct. Secondly, as an interim solution to growing resource crunch particularly when heavy subsidies are being provided to least efficient units in the public sector and costly resources are being frittered away resulting into a thinning of the overall resource position in the economy, we have to make firm choices between the alternatives : indulging the faltering units to perpetuate losses and then on the other hand, to close such units which will substantially make the overall resource position more flexible. Happily enough, the Prime Minister has rightly registered his disinclination against the former. Mere reiteration is not enough It has to be practised and a healthy precedent built up. Otherwise, inflation will reassert itself through a great distortion in resources from the more effective use to growing lapse areas and, materialy harm the national interest by blunting the competitive edges of our economy when foreign trade considerations boil down to a criticality. □

Scholarships for research in sports science

The Sports Authority of India (SAI) is to introduce a scheme to attract doctors and scientists and institutions to carryout research in sports medicine and other allied sports sciences by way of providing fellowships. The following projects are proposed for research :

(*a*) Devise physical, physiological, psychological and medical evaluation tests for periodic evaluation for selected athletes.

(*b*) Role of indigenous medicines in athletic training without violating the doping regulations of the International Olympic Committee.

(c) Sports anthropometric studies, including genetic studies which have got bearing on the selection criteria of athletes.

(*d*) Balanced diet and precompetition diet for Indian sportsmen based on Indian conditions and availability of diet.

(*e*) Pattern and incidence of sports injuries prevalent in different games and in different parts of the country.

During 1986-87 it is proposed to offer 5 fellowships to doctors and scientists working in the various fields related to sports science|medicine, etc. The value of each of the fellowships would be of Rs. 20.000|- per annum which will be given for a period of two years. Various universities, medical colleges, physical education colleges and important medical institutions, nutritional institutions will be encouraged to participate for the research work in sports science. Selected medical institutions would be asked to create a chair of Sports Medicine to provide all facilities for research scholars

An amount of Rs 13.00 lakh has been earmarked for the research projects|fellowships for the period 1986-87 to 1989-90. □

Foodgrains production looks up

The total foodgrains production in the country increased from a level of 82 million tonnes in 1960-61 to 146 million tonnes in 1984-85. During this period the production of rice increased from 34.6 million tonnes to 58.6 million tonnes, while the production of wheat went up from 11 million tonnes to about 44 million tonnes in this period. Among the commercial and cash crops, oilseeds production recorded a significant increase from 70 lakh tonnes in 1960-61 to 131 lakh tonnes in 1984-85 and the production of sugarcane increased from 110 million tonnes to 174 million tonnes durig this period. Production of cotton (lint) increased from 56 lakh bales to 85 lakh bales. These substantial increases in agricultural production have opened up possibilities of exports.

The country's exports of principal agricultural commodities are expected to reach a level of about Rs. 3,000 crore by the end of the Seventh Plan. □

Attention Readers

Reserved for Readers

From November 1—15, 1986 issue of YOJANA, we will have a regular column **"Reserved for Readers"**. We propose to present this column as a forum of views of our readers on current issues of public interest. We would also welcome genuine comments on the contents of the journal, not exceeding 200 words, by ORDINARY POST addressed to: Chief Editor, YOJANA, Room No. 508, Yojana Bhawan, Parliament Street, New Delhi-110001.

Diarrhoeal diseases : causes and prevention

Dr. V. Balakrishnan

Diarrhoeal diseases continue to be the scourge of the developing world. Children are the worst hit. Dehydration and salt-imbalance leading to exhaution are basic to it. However, it is very simple to check diarrhoea for what is simply required is to replace the lost salts and water by continued intake. Feeding should not be discontinued. But if despite this diarrhoea persists then a doctor should be consulted —a specialist is not at all required. As in other diseases the best thing is prevention—and clean habits is what will prevent diarrhoea.

DIARRHOEAL DISEASES constitute one of the largest group of diseases affecting our population. This is true of most developing nations of the world today. It has been estimated that around 1000 million diarrhoeal episodes occur in the world every year. Five million children under 5 years of age die every year. This is one third of the deaths in this age group from all diseases. They account for the highest mortality in children in the poorer nations. We have to act to stem this frightening scourge.

To the common man, diarrhoea or gastroenteritis means too frequent passage of too loose stools. Specialists' definition is no better. It is a condition difficult to define. The bowel habits of individuals vary so much that it is difficult to define what is 'normal'. Anyway, too frequent passage of too loose stools in comparison with an individual's normal bowel habits, constitutes "diarrhoea", we may say, gastroenteritis means inflammation of the stomach and the intestines.

Its effects

In diarrhoeal stools, the water content is large. That is what makes the stools loose. Many salts which are normally absorbed from the intestines are not absorbed properly. This leads to salt imbalance. Loss of excessive fluids causes dehydration, its earliest symptom being thirst. Salt depletion causes exhaustion, lethargy, muscle weakness and cramps. Severe dehydration causes dry tongue, sunken eyes, inelastic skin, loss of weight and stupor.

and causes

Diarrhoea has many causes. The principal cause of most acute diarrhoeas, or diarrhoeas, of abrupt onset and short course, is infection. The infecting organisms may be different types of bacteria or viruses. The nature of the diarrhoea depends on the infecting organism. In typhoid, which may be caused by a type of Salmonella bacillus, there will be fever and general weakness. The illness lasts for days ; when there is blood and mucus in the stools, we call it 'dysentery'. There are two main types of dysentery—"Bacillary dysentery" caused by the dysentery (Shiga) bacillus, and amoebic dysentery, caused by a parasite Entamoeba histolytica. "Gastroenteritis" is a general term given for many infective diarrhoeas, often with vomitting, caused by various different types of organisms. "Cholera" is a type of gastroenteritis caused by the "Cholera vibrio". Gastroenteritis in children is caused either by bacteria or by viruses. Now more than 90 per cent of the causatives can be identified in good laboratories.

Diarrhoea in children should not be ignored. Loss of water and salts from the body leads to more rapid

and more serious complications in a child. Therefore, replacement of water and salts should be promptly done. Many deaths in children due to diarrhoea occur because such replacement is not promptly done.

What to do ?

Do not panic at the onset of diarrhoea. A child is losing fluids and salts. Replace it. This is to prevent dehydration. Continue to feed the child fluids—any available clean fluid. Plain water, canji (boiled rice) water, sharbat, coconut water, butter milk, dilute milk—any of these the patient can take. If it is a breast-fed baby, continue breast feeding. Do not starve a patient. The patient needs nourishment. Give it. Rice, porridge, soups, bread, boiled vegetables, curd, biscuits and other easily digestible items can, and should be given. The popular belief that feeding will aggravate diarrhoea is baseless.

If the diarrhoea continues, or if there is severe vomiting, blood in the stools, fever or any sign of dehydration, consult a health worker or a doctor. Easily recognisable features of dehydration in children are thirst, sunken eyes, feeble cry, dry tongue, absence of tears and sunken fontanelle (Vertex or central point of the skull). In a baby of less than 18 months, loss of skin turgor, lethargy or loss of consciousness can be noticed.

Specialist not needed

Better consult a nearby health worker or doctor. Any doctor should be able to treat a case of diarrhoea. He need not be a specialist. Do not waste time searching for a specialist when a general practitioner is easily available. A simple examination of the stools reveals the cause of the diarrhoea in many cases. In remaining cases, detailed tests in better equipped laboratories will identify the organism. In every case of acute diarrhoea this may not be required. More important is to start treatment.

The most basic thing in treatment is to replace water and salts being lost in stool. In mild cases this can be administered orally. We use a solution containing glucose, sodium, potassium, chloride and bicarbonate. Readymade packets of these salts in the correct combination are available with all primary health centres, rural dispensaries and hospitals. It is simple and easy to reconstitute the solution. This should be given orally, in small quantities frequently. This solution is recommended by the World Health Organisation, and has been made widely popular. It is cheap and effective. It is commonly known as the Oral Rehydration Solution (ORS). Use of this simple solution has saved the lives of millions of children all over the world. In mild to moderate cases of diarrhoea, intravenous injections of fluids are not required. These should be reserved for the more serious cases and should be given only in a hospital. Simple, easily digestible feeds should be encouraged. Never starve a patient.

Neither the drugs

Acute diarrhoeas are mostly self-limiting and do not need drugs. More prolonged or severe diarrhoeas may require medication to control the evacuations of bowel. Drugs should be taken only in consultation with a doctor. Antibiotics need not be used unless really indicated. They may cause side effects and later bacteria may become resistant to them. Avoid antibiotics as far as possible. If amoeba is the causative organism, it has to be treated with specific drugs.

A majority of diarrhoeal diseases can be prevented. The organisms causing diarrhoeal diseases spread through food, water and by person to person contact. Infected food-handlers in hotels, hostels and at home pass on the organism to others. In overcrowded and unhygienic communities where under-nourished people live, outbreaks or epidemics of diarrhoea occur periodically. They occur usually during the fly season and the monsoons.

Preventable

Diarrhoeal diseases can be prevented by taking certain precautions. Wash hands before eating. Drink only boiled or cooled water if you are not sure of the cleanliness of water supply. Avoid personal contact with patients suffering from diarrhoea. Destroy flies. Eat only freshly cooked and warm food. Never keep food or water uncovered. Discourage open defaecation. Never allow your children to east food-stuffs bought from street vendors. Vomit and excreta of patients should be properly disposed. Observe strict personal hygiene. Give unstinted cooperation to the health care staff.

After all, diarrhoea is a preventable disease. Help prevent it and save the dear lives of your children and those of millions of others. The old saying, "Prevention is better than cure" is truer today than ever before. □

(Courtesy : PIB, Govt. of India)

Tourist reception centres in big cities

It is proposed to have a central Tourist Reception Centre in all important cities to cater to the requirements of the tourists. This was decided at a conference of State Tourism Secretaries and Managing Directors of Tourism Development Corporations held in New Delhi recently. The Conference also decided to take several steps to promote tourism in the country. The proposed Centre will be fully equipped to deal with the enquiries of tourists about all regions in the country and the personnel manning it will also guide them in organising their travel itinerary.

The Department of Tourism has already requested various State Governments to declare tourism as an industry. Several States have already accorded industry status to tourism and those who have not yet done so are being requested to do the needful immediately. □

Books

Labour relations :

Dynamics of Industrial Relations in India. By Dr. C. B. Mamoria and Dr. S. Mamoria. Published by Himalaya Publishing House, Ramdoot, Dr. Bhalerao Marg, Kelewadi, Giragaon. Bombay—400 004. Price Rs. 125, Pages : 787.

As the title of the book suggests this massive document on the dynamics of industrial relations in India would be a welcome book to specialists in labour relations and labour laws. The book has been divided into six parts and each one dilates upon the subject it takes up with relevant reference to experiences and practices in other countries. The book begins with an analysis of the growth of the industrial labour force, together with an examination of the factors that were responsible for it and its concomitant peculiar features. This is followed by a detailed study of trade unions, encompassing their organisation, structure, origin, functions and growth and the role of workers' education in promoting their interest in unions.

The concept of industrial relations, the nature of industrial conflicts and the role of government in providing an infrastructure to labour-management relations are also dealt with in extenso. Pointing out that over time the whole gamut of industrial relations has shifted from that of the court to the codes, from adjudication to persuasion and moral pressure and voluntary arbitration, the authors note that these developments had led them to analyse, threadbare the merits and minuses of the statutory machinery like conciliation, arbitration and adjudication. Some suggestions as to how these bodies working could be made more fruitful and meaningful are also incorporated.

Important legislative enactments pertaining to industrial disputes, trade unions, Industrial Employment (Standing Orders), Wages, Factories, Mines and plantations have been mentioned. While workers' participation in management|industry and collective bargaining are covered in a detailed manner by the authors, there is no critical appraisal of the Industrial Relations Bill. For all its elaborateness, the book would have been far more useful had it contained some critical thoughts on how industrial relations in the country still remain an one sided affair when workers do not know their rights and obligations, despite loud talks of collective bargaining. There is a general feeling that workers movement in the country is not as organised and informed of its rights and obligations to society. Some printing errors in the book would have been avoided, though the utility of the book to academicians and labour experts is undoubted.

G. Srinivasan

Family Planning :

Determinants of High Family Planning Practices : A Case Study of *Nilgiris*. By M.E. Khan and R. B. Gupta. Published by Himalaya Publishing House, Ramdoot, Dr. Bhalerao Marg Girgaon (Kelewadi), Bombay—400004 First published 1985. Pages 132. Price Rs. 70.00.

The Family Planning Association of India conducted a study of the Nilgiris in South India—a district in which family planning acceptance rate is considered higher than the average achieved so far in India. This report contains some interesting findings of this study conducted by the authors. Brought out in eight chapters, the themes covered are the background study, establishment of the problem, socio-economic background, family size norms, knowledge and attitude towards family planning, functioning of health and family planning institutions, status of women and family planning, and benefits of family planning

The pilot project is based on field survey and the data collected have been analysed to draw logical conclusions. The Nilgiris was taken as the experimental and Salem, another district in Tamil Nadu, as the control district In both the districts, urban and rural areas were selected at random. Family planning acceptance rate in them was compared and so also the current as well as cumulative fertility of the couples. The current fertility level in the Nilgiris was more or less at par with that of Salem. However, the cumulative fertility measures in terms of the mean number of ever born children indicated that the cumulative fertility in the Nilgiris was higher than that in Salem. The mean number of children born to a mother in the Nilgiris was 3.22 as compared to 2 78 in Salem.

In Nilgiris there was a significantly less disparity between the rural and urban population in respect of education, accessibility to modern amenities and exposure to mass media The disparity was wider in Salem. Likewise, community support to family planning was more extensive and widespread in the Nilgiris than in Salem. And so were the health services in the two places. The decision on the number of children the women should have was also generally taken by their husbands or mother-in-laws. Women generally did not have more than two hours leisure time during the whole day. Even during this period, they were engaged in work which had considerable value for the welfare of the family

Surely, this study has certain important policy implications. One of them is that the role of voluntary organisations in promoting family planning is quite crucial. The study suggests that every attempt should be made to raise the status of women through adult and functional literary classes for them.

Meena Bhandari

Energy scenario :

Energy Today And Tomorrow. By Sh. Maheshwar Dayal. Published by Publications Division, Ministry of Information and Broadcasting, Government of India. Price Rs. 15. Pages 103.

Ever since time immemorial, the importance of energy has been recognised by man, whether in his individual work, or in the collective life of humanity. While worship of "Shakti" as the motive power in the cosmic manifestation is a spiritual historicity, the pioneering and scientific human intellect has consistently been in search of ways and means of harnessing the sources of energy to his daily needs. The human being is the lone species that can stand erect and look upto his companion stars. No wonder he has explored the depths of the earth, looked upto the Sun and stars and is delving the depths of the oceans. It is a difficult task to enumerate at a single time all such efforts made by man so far leading to the steady advancement in the frontiers of energy research. However, the book under review precisely sets its foot on this ardous path and succeeds remarkably.

The book is in easy seven sections comprising 103 pages and it starts with the basics of work, energy and power and explains in simple language many concepts. The energy content of various fuels and different forms of energy are outlined. This is followed by a description of sources of energy, viz., hydro, coal, oil and natural gas and nuclear. There is more in this book to the commonly understood terms—fission, fusion, breeder reactors, etc. After this survey, the book deals at length on Alternate Sources of Engergy, Viz. Solar Energy. Bio-Energy. Wind Energy, Animal Energy and Ocean Energy—the processes of harnessing them to human needs and the progress achieved internationally in its adaption with suitable references to the Indian context The book also has a section on environmental impact of such energy usage and has stressed the importance of increasing the energy supply as well as acceptable environmental objectives

R. C. Srinivasan

Import substitution :

Import Substitution and Economic Efficiency. By Dr. P. Leela. Published by Himalaya Publishing House, "Ramdoot", Dr. Bhalerao Marg Bombay-40004. Pages 129. Price Rs. 70.

Import Substitution (IS) strategy has been practised by many developing countries in the post-war period to achieve economic development and self-reliance. However, the characteristic features of Import Substitution regimes varied widely depending on local conditions factor, markets retionals and efficient allocation of their scarce resources.

Dr. Leela in this book examins the impact of Import Substitution policy on economic efficiency of developing countries with particular reference to Indian economy. The concept types and India's experience of this strategy have been reviewed in Chapter-I. The impact of Import Substitution strategy on economic efficiency and growth of manufacturing sector in India has been analysed with the help of Domestic Resource Cost and effective rate of production, in Chapter-II. In the background of the high degree of effective protection enjoyed by India's nitrogen fertilizers industry, its degree of efficiency has been evaluated scientifically in Chapter-II. It has been estimated in the study that the production of urea enjoyed effective rates of production at the rate of 53.1 per cent based on natural gas, 111.6 per cent based on naphtha, 90 per cent based on fuel, oil and 81.4 per cent based on coal. Against the high rate, of protection, it has been shown in this study, that there has been high magnitude of inefficiency in this industry.

Thus unlike the macro level studies on the subject the micro-level study of Dr. Leela provides scientific methodology and insights to identify the major sources of economic efficiency or inefficiency of individual import substitution sectors and industries in developing countries in general and India in particular. Besides, this study suggests rationale for the policy makers to evolve effective measures in order to improve efficiency of industrial units covered under import substitution strategy in India

J. Rajeswar Ra[o]

Operation Flood during Seventh Plan

OPERATION FLOOD II PROJECT would continue to be the major dairy development programme under the Seventh Plan. This project is expected to cover practically all the States and four Union Territories of Andamans, Goa, Pondicherry and Mizoram. This project would be implemented through a 3-tier co-operative structure with a federation at the apex. It is envisaged to increase the number of milk-sheds from 116 in 1984-85 to 175 by the end of Seventh Plan. The main thrust of this project would be the dispersal of dairy development activities on a wider scale in the country. It is proposed to increase the average milk procurement from the rural areas from 5 53 million litres per day in 1984-85 to 11 50 million litres per day in 1989-90. It is also proposed to increase the number of farm families to be covered under this project from 3 48 million in 1984-85 to about 10 million in 1989-90. Similarly, the number of primary milk producers' societies would be increased from 29,000 in 1984-85 to 50,000 in 1989-90.

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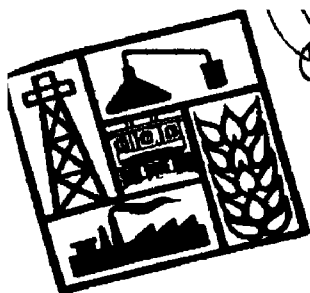
Dryland farming during Seventh Plan

ABOUT 70 PERCENT of the total cultivated area in the country is dryland/rainfed area and a large proportion of the output of important crops such as coarse cereals, pulses, oilseeds and cotton comes from these areas. These areas, however, contribute only 42 percent of the total food-grains production in the country: production in these areas is low and fluctuates widely depending on the behaviour of the monsoon.

In the Seventh Plan, high priority is envisaged for the development of dryland/rainfed farming with a view to raising productivity and achieving the other important objectives of reduction in poverty, unemployment and regional disparities. The main focus of development strategy is to minimise the risk to the farmers and to provide them with area-specific technological packages, inputs and services. Emphasis will be on area development approach, taking watershed as a unit of development. The development measures to be undertaken in the micro-watersheds would include soil and moisture conservation, improved/drought-resistant seeds, chemical fertilizers and improved implements. Efforts would be concentrated on non-water intensive crops, e.g., coarse cereals, pulses, oilseeds and chillies. Further, in order to provide adequate tree cover and promote subsidiary occupations, horticulture, afforestation and pasture development would be an important part of the dryland farming programme. □

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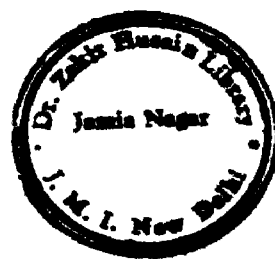
Power to the people,
the only way!

NEXT ISSUE

Focus on housing

Industrial expertise for setting up 'sunrise' industries

ACCORDING TO THE SEVENTH PLAN **document considerable expertise has been built up in the public sector to design, engineer, erect, commission and operate large enterprises. The document feels that the industrial policy should ensure the utilisation of this expertise in the public sector and also encourage involvement of the private sector for the development of 'sunrise' industries such as telecommunications, computers, microelectronics, ceramic composits and biotechnology. Industry must be encouraged to adopt technologies like fibre optics, lasers, robotics, etc., for enhancing productivity and quality. As a matter of policy, the document feels, the public sector will also have to assume an increasingly leading role in technological modernisation of manufacturing.**

The selective approach will need to be supplemented, however, with steps to consolidate and improve the functioning of existing enterprises. Such an initiative has a number of policy implications : endowing management with autonomy consistent with their accountability; weeding out such industrial units as cannot become viable through modernisation, amalgamation and restructuring. improving and tightening public sector projects, selection procedures; and not treating the public sector as the repository of sick and unviable industrial units. □

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Power to the people, the only way!

S. K. Dey

Is power to the people, as envisaged by Gandhiji under swaraj, still a dream? Would devolution of authority, responsiblity and resources from the Central Government down to the units of physically contiguous villages be ever given a shape? These questions are examined here by the author, a former Union Minister for Community Development. Nehru, he says, had 'a passion for reviving rural Indian life'. But the developments after his death clearly show, he laments, that 'India was going to steer a totally different course'. "Power to the people" was to be replaced by "Power over the poeple". Striking a note of caution, the author says, "It is time that things changed. India must be ruled from roots up . . . . If life is not annihilated by the atoms, sanity requires that man be offered the only alternative left : turning power over to the people, whatever the cost or dangers incurred."

TWO WORLD WARS were fought in the first half of the 20th century. The first one ended in the Treaty of Versailles, which spawned Hitler and his fellow-Nazis and led to World War II. Since then technology has developed to a degree that staggers the imagination. America, the paradise for emigrants from Europe and elsewhere, and the Soviet Union have become super-powers. Between them they have raised the destructive level of weapons on which they are spending over $200 per head annually—about double the per capita income in India, which is a subcontinent in terms of population. America offers total freedom of expression and places no limits of what individuals and groups may earn. The USSR guarantees employment and the basic essentials to everyone, but severely curtails the freedom to think, speak or write on political matters.

The new pattern of democracy in the "advanced countries" has resulted in the introduction of a level and quality of life based on science and new technology producing goods far in excess of the capacity of the masses to utilize or consume With it have come the drug culture, charlatanism, the search for thrills in pseudo-mysticism and deviant practices. Youth, in particular, has become increasingly alienated from the family and society Military aid is also adding to the tensions between neighbouring states. With enough stockpiles of weapons around to destroy the planet several times over, the threat of a holocaust hangs over mankind.

India has freed itself from colonial shackles and attained political freedom. It has one-seventh of the world's population, a culture, religion as old as any, and a capacity to assimilate and survive the vicissitudes of history. Qualitatively, though not quantitatively, it is second to none in science and technology. Its struggle for freedom under the unique leadership of Mahatma Gandhi, Nehru and others is now a matter of history.

Gandhi wanted the Congress that fought the war of independence to be disbanded and turned into a *lokseva sangh* (a voluntary body in the service of the people). He wanted a constitution based on the exercise of power at the grass-roots level of India's 557,000 villages, which is where people really lived. He wanted power to rise in circles up to the Centre, then to the rest of the world. But power was too powerpul a magnet. Few were really willing to listen to the Father of the Nation. A raving madman assassinated Gandhi in the belief he was an enemy of the Hindus. Needless to say, Gandhi's dream of "Power to the People" (self-rule, or swaraj, as he called it) seemed to have vanished in a nightmare.

Partition led to a harrowing struggle. Millions on both sides were uprooted from environments that had been theirs for centuries Nehru was at the helm, as the Mahatma had wished.

Nehru and rural revival

When I heard Nehru appealing over the radio for "masons to build the mansion of New India", I abandoned a senior executive post and joined him. But this is not the place to recount that story. The mission that Nehru entrusted me with was to help awaken, organize and develop the Indian people, 80 per cent of whom lived in the rural heartland, make sure they progressed harmoniously and to build the institutions and train the personnel that were to man them.

Over the years, I have dealt with very large numbers of people on the subcontinent I have travelled all over the world—Latin America, Europe, Africa, the West Asia, Asia. But I have never come across anyone like Nehru with such a total abhorrence of riches, although he himself came from a near-princely family. Nor can I describe the anger and suffering I felt throughout my own childhood and youth as the member of an obscure rural family of 19 persons—not to mention the one or two guests who would drop in every day—living off five acres of rain-fed land.

Nehru's passion for reviving rural Indian life and my own concerns found common ground. So, out of the blue, came this mission for life in a meeting between the Prime Minister of India and a farmer's son. Between us we accepted, without reservation, the Triple Charter Rights.

O the right to live;

O the riht to work for a living,

O The right to receive what one has earned

There were also the three tenets of faith,

O people can do it,

O people can be trained to do it;

O conditions can be created to do it.

Nilokheri (now in Haryana) was picked for the pilot rehabilitation project (the "road to New India", as I called it) for people displaced from West Pakistan. It began as a mixed rural/urban habitat between the railroad on one side and India's oldest national high way running from the most easterly point to a point 85 miles northwest of Delhi. It was built to accommodate 5,000 people who would live on their own and be trained on the spot in all the relevant areas. They were guaranteed a livelihood and they set up their own Panchayat to loo kafter law and order, where the police had no place.

Today, over 15,000 people live there. Not a single communal clash has taken place despite the fact that the Sanatan Dharma Temple, the Arya Samaj Temple and the Sikh Gurdwara stand side by side, despite the continuing terrorism and communal violence that have been going on in the surrounding areas for more than a year. It also serves as the headquarters for the Community Development Programme's associated services in neighbouring villages.

"All over India, we have centres of human activity which are like lamps spreading their light more and more in the surrounding darkness", noted Nehru and made a passionate plea for "the light to grow unil it covers the whole land."

Nilokheri has repaid the original investment many times over. Though it has become fully integrated with the present Haryana environment, it has many unique lessons to offer on development and how to make it self replicating and self-perpetuating.

New rural administration

Nilokheri and earlier experiments in India were the starting point for the Community Development Programmes that were to reactivate the rural areas. A single multipurpose programme went down from the centre to the villages. It involved the whole nation, and mutual help and organized efforts for both planning and implementation came to be the rule. Over the years the programme covered all of India's 557,000 villages. The entire administration was developed along a single line, but with a multitude of agencies coordinating the work at every stage.

If people were to become both the ends and the means, as they should, then they had to learn to wield power through work. Villages could not be administered from Delhi, the state capital or even the head offices of district governments. Nor could villages be attached to cities, or turned into homelands. So emerged the concept of dividing the country up again into 5,446 development blocks Representatives were elected on the basis of adult franchise to run the institutions to which Nehru gave the name of *panchayti raj.*

The new system of rural administration through grass-roots democracy was linked from the centre to

the local level by a gradual devolution of authority, responsibility and resources. But the development of local government was not enough to ensure democracy. Out of this grew a network of multipurpose cooperative institutions, beginning with a viable group of villages provided with supportive services at the neighborhood, district, state and national level in a variety of areas ranging from union matters to the formation of functioning cooperative federations.

These federations were represented in the national cooperative union organized as a federation of national federations for the purpose of providing training, evaluating programmes and mutual enrichment.

The idea was to build a new cooperative commonwealth so as to promote economic democracy and thereby hold the balance between the growing public sector and the expanding private sector. The differences in culture, language and religion scarcely proved to be an obstacle inasmuch as programmes were implemented on a strictly consensual basis.

The country also saw the emergence of a virtual campaign aimed at promoting higher government institutions in engineering, medicine, veterinary science, agriculture, horticulture and fisheries—in short, in every area that could help further rural development. Popular structures like the *panchayati raj*, the *sahakari samaj*, parliamentary consultative committees and state legislatures began offering material, advisory and moral support.

In addition to village workers, who were put through a two-year training to prepare them for a wide variety of tasks, the relevant ministries in Delhi and the states concerned delegated fully trained officers for working under the coordination of block development officers. Outstanding workers from every neighbourhood, known as *gram sahayaks* (auxiliary village workers), were given a week's training.

This, in brief, is the broad vision of India that Nehru, as Gandhi's chosen successor, had in mind as he tried to find the answer to the questions raised by his mentor.

At Nehru's request, I (a minister at the time) had a ong discussion with Arnold Toynbee. The historian's parting words were that the adventure of building a democracy on the scale of India, with its enormous ecological, character and historical diversities was "a most daunting, but exhilarating" adventure.

In 1954, Nikita Khrushchev and Nikolai Bulganin were shown around a community development block some 40 miles north of Delhi. No visitor was so wholly taken up by what was being attempted there.

He was fascinated and asked questions, not one of which was evaded. "Time", he kept saying, "is a wheel moving in one direction that can neither be reversed nor resisted." After I said goodbye to our guests as they were returning to the Rashtrapati Bhavan at noon, Khrushchev came hurrying back to ask one more question he felt he had to ask: "How many years did you say you would take to fill in the picture you depicted ?" "Fifteen", I told him. Answered Khrushchev : "You won't have the time, comrade. Ten years is the most I give you."

I accompanied Chou En-lai to Mahabalipuram, 40 miles from Madras, to see the work done in the villages as well as the archaeological monuments in which he had a special interest. He was a quiet, gentle person with quite expressive features, but few words "The hardest work anyone could have undertaken", was all he said. One of the monuments he saw was a large vertical slab of stone on which was carved a detailed description of local government procedure going back to over 1,000 years. Chou En-lai struck me as a very unusual person.

The eminent, but controversial, biologist J.B S Haldane, who was Nehru's guest at the time, told him: "You are out to transform human character. A work of more than one lifetime, nay, many lifetimes, may boy !"

There are lessons to be learnt from the back-breaking experience of almost half a lifetime. Neither man nor any system designed for him, can survive for long unless poverty and ignorance are vanquished. The basic requirements for sustaining life—food, shelter, health and education—are the highest programme priorities. These must be combined with the human being's fundamental right to work There has also to be the freedom to write, think and speak without fear

This must also be accompanied by an organized and interlocking devolution of authority, responsibility and resources from the central government to units of physically contiguous villages. The devolution process is an absolute prerequisite in the fast-shrinking world-village in the ever-expanding cosmos

Power over the people !

India's huge pioneering effort was to come to an end with its first and last *panchayati raj* and *sahakari samaj* community development programme Nehru got me out of bed around midnight early in May 1964 and asked me : "Will your *panchayati raj* survive if the powers that he attempted to demolish them ?" "No," I replied, "except perhaps for Maharashtra, Gujarat and, possibly, Tamil Nadu. I need five more years to make them safe from destruction, especially in the Aryan Hindi-speaking heartland." "You have no time, my friend, you have no time." Nehru looked grim and saddened. On May 27, 1964, this giant, yet the gentlest of men, passed away like a child. With his death I left

behind an epoch and a bundle of dreams that are now but wisps of memory. How prophetic Khrushchev had been!

Nehru's immediate successor, Lal Bahadur, was quite blunt : "People can never rule themselves. Look at the Uttar Pradesh districts. Panditji had unlimited faith in their capacities. But it would look bad if I were to take up this subject which was so close to his heart. Let's wait and see what the Party thinks of it after the passage of some time."

Lal Bahadur did not have to wait long: his days were numbered. Nehru's daughter soon came on the scene. She abolished the ministry of which her father had been so proud as it was the first of its kind anywhere in the world. It was becoming very clear that India was going to steer a totally different course. "Power to the People" was to be replaced by "Power over the People".

Elderly leaders lusting for power, who had been kept at arm's length by Nehru, all rushed back into the fray, both at the federal level and in the states. The clarion call had already been sounded for a new battle of Kurukshetra, but of an entirely different kind.

The term "community development" was banned from use. The central government withdrew from the *panchayati raj* and the *sahakari samaj*. American volunteers who played an important role when the programme was begun in 1952 had already gone away. They felt hurt as they were prevented from having their own representatives in every neighbourhood unit as they had naively hoped.

Things became worse when the running was taken over by local governments of people and cooperatives, something to which America in the time of Dulles was totally allergic.

Delhi ministries and state-level departments were immeasurably relieved as institutional pressures for coordinated action were removed. Members of the Indian parliament and legislative assemblies heaved a sigh of relief and were delighted that in elections they would no longer have competitors, such as chairmen of *zilla parishads* and *block samities,* who wielded statutory power, leaving little room for arbitrary authority, graft and patronage. The block development officers now functioned in fact as public relations officers with authority in some peripheral programmes.

The organization was merged with the sprawling ministry of agriculture which had been virtually asleep in the late 1940s and early 1950s. Centralization attained a new level.

Institutions and development personnel could not be disbanded even though they were as large as the army. The concept of decentralization became about as grotesque as the *devadasies* in orthodox Hindu temples. The rhetoric about material development soared to new heights. Newspapers thrived on inter-state rivalry with the public picking up the tab as never before. Ministers could not function unless they had special lampposts adorning their gates, standards flying from their automobiles and were surounded by sentries and guards because of communal terrorism.

A challenge extraordinary

The only other region where ministers and government officials behave in this way is Latin America, a consequence of US foreign policy orientations in this part of the world. No wonder terrorism is all-powerful there, as I saw for myself. Governments have a choice between developing and being destroyed; but they cannot stand still and indulge in overblown rhetoric without suffering the consequences.

Shortly after I resigned from the ministry early in 1967, I was invited to a world conference of United Nations development agencies in May 1967 in New York, under the auspices of the United Nations Development Programme, whose administrator at the time was Paul Hoffman. At the end of the session, I was asked to accept an assignment, as "special advisor to the UNDP Administrator", to make a broad study of rural development and examine ways of relating its requirements to more effective UN efforts, with the study to cover Latin America, Africa. the West Asia and Asia.

When the mission was completed, another interagency meeting was called in New York in May 1968 The report, which was entitled "But, for whom ?", was accepted in full, though everyone considered the problems it raised to be a formidable challenge.

The report argued that the world was being split and every nation divided into two—the affluent "few" (the growing middle elite and the entrepreneurial class) and the swelling ranks of the indigent "many". Latin America was worst off and close to breaking point.

Dr. Jekyll and Mr. Hyde!

The report recommended conducting six pilot projects around the world, with each headed by the highest dignitary in the state concerned. UNDP's resident representative would provide local coordination between UN agencies, on the one hand, and the chief executive of the state concerned, on the other. There was to be maximum cooperation with the local people. Paul Hoffman is not around any more, and the report has been consigned to the UN archives.

It was John F. Kennedy who said : "If the state cannot help the many who are poor, it cannot save the few who are rich." And assassination was the price the Kennedy brothers paid for this philosophy. The same fate overtook Martin Luther King who spoke of Jefferson and Lincoln and declared that "all men are brothers". It was inevitable that the new world should prove to be something quite different from what the pioneers from Europe and elsewhere had imagined.

Nehru had a vision of life and he spelt it out in a late-night chat with the Countess Mountbatten and myself. "Life is a mystery, a pilgrimage but inevitably without a specific destination. A world without war is a dead world. But what should the war's aim be—annihilation or salvation ? And war, with what ? Weapons or thoughts ?"

Democracy has proved it can work. There are examples of it all around the world standing out like rocks that have weathered the years and the storms. The human mind is still primitive in that it is obsessed by a mania for false security. Mister Hyde and Doctor Jekyll lurk in everyone of us, centripetal and centrifugal forces are yoked together. If life is to proceed, the balance has to be maintained

A new course for us

As the "largest democracy in the world", India is gaining a new status despite the presence of jealousies and madnesses waiting to pull it down or tear it apart. It has a new government headed by the youngest ever prime minister. With all due deference to the new team's character, enthusiasm and intentions, I, as someone is prepared to live and die for democracy, am puzzled by one thing.

India has been ruled and bled long enough from Delhi. It is time that things changed. India must be ruled from the roots up. The organism as a whole will then develop vertically and horizontally. The "centre" is a misnomer, if not an utter falsehood. In fact, though, it is a people-versus-state-monopoly situation. And it is contagious.

If life is not annihilated by the atom, sanity requires that man be offered the only alternative left: turning power over to the people, whatever the costs or dangers incurred.

Life needs to be lived closer to Mother Earth than in midair, drawing strength and vitality from it.

No two particles of sand are alike. It would be silly to imagine that, should the system work, it will not vary from nation to nation, from age to age.

Time and technology seem to be making quantum leaps. The 21st century is already beckoning India's bright young minds. But the question is, for whom and how ? Half of India's people live without knowing where their next meal is going to come from. For them, the obsession with the 21st century means nothing, they await answers to their problems !

Who knows, given a chance, India's people, the simple folk, may yet work out a middle way between capitalism and communism which are now at war, a middle way that is conciliatory not confrontational, competitive not combative. □

Satellite communication scheme

The Department of Telecommunications has prepared a Plan to set up about eighty more fixed|transportable earth stations in the country during the Seventh Plan Period at an estimated cost of Rs. 174 crore.

Satellite Communication scheme using INSAT IB is already in operation in the country. For public telecommunications 29 fixed earth stations of the Department of Telecom are working.

Three transportable earth stations : one heavy capability for TV uplink and other two for voice telecommunication in remote areas, are also functioning. Five earth stations for specific use of public sector undertakings are also functioning.

Modernisation of telegraph services

A three-year Action Plan has been drawn for the modernisation of the Telegraph Network by the Department of Telecommunications. This Action Plan envisages development and introduction of Store and Forward Message Switching Systems, Electronic Teleprinters, Electronic Key-Boards, Electronic Concentrators and Phonocom Concentrators as building blocks of Mechanised network.

The Action Plan envisages mechanisation of 98 per cent of the network and is aimed at delivery of 98 per cent of telegrams within 12 hours from the time of booking. The Action Plan is to be implemented during the Seventh Five Year Plan. □

Rs. 4 crore sericulture project for Orissa

A mulberry sericulture development project has been approved for implementation in the Ganjam district of Orissa. It will cost Rs. 4.27 crore spread over a period of four years.

The project aims a covering 1,000 acres with high-yielding varieties of mulberry in compact blocks in Ganjam under the Paralakhomundi Tribal Development Agency area, inhabited largely by tribal communities. The project will provide employment to 5,000 beneficiaries and will produce 1.8 lakh kgs. bivoltine Cocoons to yield 17,000 kgs. of silk yarn.

Assistance for the project will be provided by the Central Silk Board, the state government and special central assistance schemes like ITDP and NABARD.

Redistribution of surplus land, foremost task!

Bharat Dogra

Inequalities in land holdings in India, according to the author, are very wide and inexcusable. A much more egalitarian distribution of land than what presently exists is a must for reduction of poverty, he feels and adds that the Seventh Plan gives the impression of being very vague about what exactly needs to be achieved in the field of reassessment and redistribution of land declared surplus. The author pleads that Govt. should fix high targets for redistribution of surplus land during the Seventh Plan period, and for this seek cooperation of the rural poor.

NO SERIOUS DISCUSSION on reduction of poverty in India can avoid the question of redistributing of agricultural land. The reasons are not far to seek. Nearly 60 per cent of India's population, or nearly 450 million men, women and children, are dependent on agriculture as the main, often the only, source of their livelihood. And, according to the official statistics, 73 per cent of Indian farmers togther cultivate only 23 per cent of the total cultivable land in the country.

Unequal land holdings

In a big country facing several problems in maintenance of proper land records, it is not easy to find out how much land is owned by big and how much land is owned by small farmers. There are problems also in defining 'big' and 'small' farmers. Despite these problems several efforts have been made by economists to find out the extent of unequal distribution of land. For instance, according to estimates made by four economists (I. Ali, B.M. Desai, R. Radhakrishna and V.S. Vyas, see Economic and Political Weekly, annual number March 1981) nearly 65 per cent of the farmers in India either do not own any land (Landless) or else own less than 2.01 hectares of land (small and marginal farmers). They together operate only 19 per cent of the total cultivable land, on the other hand farmers owning 8.1 hectares or more land are defined as 'very large'. They constitute only 8 per cent of the total farmers but operate 40 per cent of the cultivable land.

Such inequalities would be considered bad in any country; but in India, which has 350 million acres of land, and 450 million men, women and children dependent on agriculture, such inequalities are inexcusable.

Equal distribution, a must

Irrespective of what pattern of overall development, including industrialisation, India adopts, and to what extent job opportunities become available for members of landless, marginal and small farmers in other sectors, a much more egalitarian distribution of land than what presently exists is a must for any reduction of poverty in India. In fact, the present day unequal distribution of land is also res-

ponsible for keeping wages low in other sectors of the economy—it forces members from poor peasant households to migrate to cities in a desperate search for any earning that will keep away starvation; hence industrialists and other employers find it easy to force low wages on them.

The ceiling laws

In principle at least, the Indian government accepts the need for redistribution of agricultural land. During the last decades, at one time or the other, 'ceiling' laws have been enacted in almost all states of India to impose a limit on the ownership of agricultural land and for the redistribution of land declared 'surplus' in such a way. What is more, these laws have been frequently amended to make them, in principle at least, more 'radical'. For instance, in the State of Uttar Pradesh, ceiling has been fixed at 7.30 hectares of irrigated land and 10.9 hectares of non-irrigated land. Once the laws are enacted, the administration is supposed to take over the surplus land and redistribute this among the landless and other weaker sections. From time to time various state governments have issued instructions to speed up land-redistribution work, and special drives for completion of land-distribution work have been launched.

And the surplus, mostly poor !

What has been the impact of this work spread over the last three decades or so ? According to statistics given by the Planning Commission, in October 1985, out of the total cultivable land of 350 million acres in the country, only 7.2 million acres of land have been declared surplus and only 4.4 million acres have in fact been distributed.

The reason why all of 7.2 million acres of 'surplus' land could not be redistributed is partly administrative inefficiency and partly the appeals against the take-over of their lands by big landowners in the law courts. Even the 4.4 million acres of land shown as having been re-distributed on paper is not cultivated by the poor allottees of this land in all cases as they are afraid of the threats held out to them by the musclemen of big land owners whose land was taken away. Frequently this is poorest quality land. very difficult to cultivate profitably. If they have to part with some land, the big landowners ensure that they part with only the poorest quality land.

Even assuming, however, that by greatly improving administrative implementation of ceiling laws, it can be ensured that all of these 7.2 million acres of land are successfully cultivated by landless and other poor allottees of this land, even then, can this achievement be called satisfactory ? Clearly, a redistribution that involves only 2 per cent share of the total agricultural land—and that too generally the poorest quality share—cannot be called a significant achievement.

The manipulations

What has happened is that the big landowners have changed their land-records in such a way—by making paper-transfers of land in the name of various relatives etc.—that although they continue to hold land well in excess of the ceiling limit, in records this is not shown. Also, they've taken full advantage of the various exemptions that have been given in the ceiling laws—for instance, land in excess of the ceiling limit is allowed in some states for growing orchards, in some states for various other purposes.

Apart from cultivable land becoming available for redistribution on account of the enactment of ceiling laws, cultivable land has been made available for redistribution due to another factor also. This was the famous 'Bhoodan" (gift of land) movement started by Acharya Vinoba Bhave, soon after Independence for voluntary surrender of land by big landowners. This work was taken up also by several other disciples of Gandhi, helped by the government. In all, nearly 4.2 million acres of land were received in Bhoodan, of which about 1.3 million acres of land have been re-distributed. Here again there are complaints of poor quality land being distributed, and the allottees being unable to cultivate the land on account of threats held out by powerful, big landowners.

Seventh Plan projection

Looking ahead the document on India's Seventh Five Year Plan (1985—90), recently released by the Planning Commission, says that "appropriate measures" have to be taken for land already declared surplus but not yet redistributed. This document also says that estimates of ceiling surplus land have to be reassessed, specially in newly irrigated areas (in view of the lower ceiling limits for irrigeted areas). On the whole, this document give the impression of being very vague about what exactly needs to be achieved in this field in the next five years. This is in sharp contrast to the specific targets fixed for, say, artificial insemination of cows or planting of trees.

If the government wants to improve the credibility of its various announcements on reducing poverty, it is necessary that it should fix high targets for redistribution of land in the Seventh Plan, and then actually achieve these targets, with the co-operation as much as possible of various Organisations of the rural poor that exist in some parts of the country.

Is public sector being stiffed ?

Dr. Uma Shankar Prasad Sinha

There had been a tilt towards the public sector up to the Sixth Five Year Plan. But, according to the author, in the Seventh Plan this tilt is not discernible. Because, according to him, the percentage increase in the public sector outlay in the Seventh Plan, as compared to the previous plans, is almost negligible. The private sector has assumed substantial proportion of outlays in the Seventh plan. The public sector is thus being ignored ! This, the author feels, amounts to significant diversion of the economy from the declared goal of realising the socialistic pattern of society.

THE NATIONAL DEVELOPMENT COUNCIL put the seal of its approval on the Seventh Five Year Plan (1985-90) in November 1985 with minor changes. The Plan is by and large the same in almost all the respects. The main thrust of the Seventh Plan is to achieve social and economic self-reliance. The plan envisages a growth rate of 5 per cent per annum. This is more or less the same as was in the Sixth Plan and has already been achieved. The plan also envisages a growth rate of four per cent in agriculture, eight per cent in industry and 6.8 per cent in exports. In agriculture, due emphasis has been given to dryland farming while industry has been taken as the basic source of increasing income and employment. The main objectives of the Seventh Plan are also more or less the same. A rise in the G.D.P., removal of unemployment, alleviation of poverty, modernisation, achieving self-reliance, reducing socio-economic imbalances and increasing efficiency are some of the objectives of the Seventh Plan.

Seventh Plan, ambitious !

The Seventh Plan has been formulated against the background of the success of the Sixth Plan. The Economic Survey, 1984-85 opines that the economy has performed satisfactorily in almost all the sectors It was but natural that the Seventh Plan inherited a high rate of social, economic and technological development reserves in the form of high rate of savings, a large pool of scientific, technological and managerial manpower resources which are expected to counteract the internal and external disturbances and are also expected to put the Seventh Plan on an even keel. The Seventh Plan also attaches to itself a "Perspective Plan" for fifteen years (1985-2000) in which it asserts to eradicate some of the crucial and gigantic problems of the economy like poverty, unemployment health, education etc. in piece-meal manner by the end of 2000 A D to the near satisfaction of all concerned. Thus, the Perspective Plan provides a suitable base for constant monitoring of the crucial problems which affects the peoples' quality of life in the country.

Thus, in the background of its satisfactory performance in the preceding plans and a buoyant economy at the time of the formulation, the Seventh Plan is an ambitious one. The total outlay of the Seventh Plan has been fixed at Rs. 3,48,148 crore which is a little higher than in the Draft Seventh Plan Whatever the increase is there, it has gone in favour of the private sector. Accordingly, the net investment, barring the current outlays of Rs. 25,782 crore in the public sector, has gone upto Rs. 3,22,366 crore as against Rs. 3,20,000 crore stipulated earlier in the Draft Document. Out of the total outlay, Rs. 1,80,000 crore is in the public sector and the remaining Rs 1,68,148 crore in the private sector

Public sector ignored ?

However, the public sector outlay has remained unchanged at Rs. 1,80,000 crore at 1984-85 prices while the approved Sixth Plan outlay was Rs. 97,500 crore at 1979-80 prices. Of the total outlay of Rs. 3,48,148 crore, the public sector outlay including the current outlays constitutes 51.7 per cent while the private sector constitutes 48.3 per cent. Thus, there is no significant difference or tilt towards any sector. The ratio of distribution of outlays between public and the private sector during the Sixth Plan was 56.62:43.38 per cent (Rs. 97,500 crore + Rs. 74,710 crore = Rs 1,72,210 crore) The table given below shows that the total outlays, including the current outlays were Rs. 69,303 crore, 24,882 crore, 11,250 crore and Rs. 7,700 crore during the Fifth Plan, Fourth Plan, Third Plan and Second Plan respectively.

The public sector outlays in the Seventh Plan represented an increase of nearly 83.77 per cent in nominal terms over the Sixth Plan and 42.54 per cent in actual terms at a compound rate of inflation of 5 per cent per annum which appears reasonable to be assumed during the Seventh Plan if past price-trend is taken into consideration. Though the plan has been drawn upon the assumption that non-plan expenditures of the Central and State Governments will grow at around 5 per cent in real terms (at a rate equal to the growth rate of Gross Domestic Product), thus neutralising the effects of price-increase. Still the above assumption approximates to reality. As a result of which the actual value of the amount for the public sector falls down to nearly Rs. 1,39,000 crore. However, the actual expenditure of the Sixth Plan was over Rs. 1,10,000 crore. If the percentage increase in the public outlays is viewed against the actual outlays of the Sixth Plan, it does not represent a significant proportion. If the percentage increase in the outlays of the public sector during the Seventh Plan is calculated on the basis of the actual expenditure of the Sixth Plan (Rs. 1,10,000 crore) against Rs 1,39,000 crore which will be the real value of the amount stipulated for the public sector (Rs. 1,80,000 crore) at the end of the plan and hence should be taken as the basis, the percentage increase in the public sector outlays comes to a negligible 26.37 per cent. This would be the practical state of affairs and hence real figure.

Table

(Rs. crores)

Plan	Total outlays	Public Sector outlay including current outlays	Column (3) as percentage of Column (2)	Private sector outlays	Column (5) as percentage of Column (2)
1	2	3	4	6	6
2nd Plan	7,700	4,600	59.74	3,100	40 26
3rd Plan	11,250	7,250	64 44	4,000	35.56
4th Plan	24,882	15,902	63.9	8,980	36.1
5th Plan	69,303	39,303	56 7	27,000	38 96
6th Plan	1,72,210	97,500	56 62	74,710	43.38
7th Plan	3,48,148	1,80,000	51 7	1,68,148	48.3

Source : For Second and Third Plan, Draft Third Five Year Plan, p 25 For Fourth Plan, Fourth Five Year Plan, Summary, p. 16. For Fifth Plan, Charan D. Wadhwa (Ed), Some Problems of India's Economic Policy, Tata Mc-Graw Hill Publishing Company Ltd., New Delhi, 1977, p 180. For Sixth Plan, Sixth Five Year Plan, 1980-1985, pp. 59 & 63. For Seventh Plan, The Economic Times, Calcutta, November, 12, 1985

*Public Sector outlays Rs. 33,603 crores + Public Sector current outlays + Rs. 5,700 crores + Inventories Rs 3,000 crores + Private Sector outlays + Rs. 27,000 crores = Rs 69,303 crores

The table also shows that the ratio of distribution of the total outlays between the public sector and the private sector has been 59 74:40.26, 64.44:35.56, 63.9.36.1 and 56.7:43.3 in the Second Plan, Third Plan, Fourth Plan and Fifth Plan respectively. The ration for the Sixth and the Seventh Plan have already been discussed above. This shows that the share of the public sector had not only been significant but also there was an increasing trend in it upto the Third Plan. In the Fourth Plan, this trend was definitely absent but the proportion was near the Third Plan. Although the share of the public sector fell down in the Fifth and the Sixth Plan, still it was a significant proportion with a tilt towards the public sector till it became nearly tiltless during the Seventh Plan. This shows that the trend in favour of the public sector has gone down in recent years.

Primacy to private sector

Thus, private sector has assumed substantial proportion in the Seventh Plan and the public sector is being ignored. This may appear expedient from the point of view of achieving a feasible growth rate at the end of the plan and also greasing a section for that sake, but undoubtedly throwing the economy back on the mercy of a section of the people and hence help increase the centralisation of capital in

the hands of a few which will act as a pressure group for the favour of the private sector.

It amounts to significant and substantial diversion of the economy from the long declared goal of realising socialistic pattern of society by slowly and gradually increasing the quantitative and qualitative role of the public sector. To stand between the two in the form of a mixed economy would not mean only keeping the economy at a cross-road but even in the culmination of a slow growth rate resulting in the various kinds of backlogs, pitfalls and constraints.

But why ?

But then a question arises at the same time as to why the private sector is being accorded an increasing role in recent times, particularly after the Sixth Plan in the process of planned economic development of India. The budget of 1985-86, the present Seventh Plan Document, the change in the MRTP Act raising the limit of wealth to be kept by the big companies, and the government motivation etc. amply confirm this trend. The main argument which can be put forward in this connection is that the public sector was given priority in the earlier plans so that key and basic industries could be set up by the Government itself which could provide sufficient infrastructure in almost all the sectors of the economy so as to put the economy on the path of sustained economic growth. It was expected that this part of the development process could be realised only in the public sector as the private enterprises were lacking in this direction on the one hand and their profit motivation orientation was a hurdle in the investment in this sphere on the other. Naturally, the Government had to come forward to perform this onerous task of building the infrastructure for self-sustained growth. But now when this task is largely fulfilled, the Government wants to attract the active participation of the private entrepreneurs in the process of development. This appears reasonable both from the point of view of financial crunch that the Government is facing ab initio in the formulation of the Seventh Plan and a purposeful utilisation of the vast multitude of resources that is lying idle in the hands of the private entrepreneurs which causes a lot of detriment to the economy in the form of black money, artificial shortage, conspicuous consumption, price-rise and such negative things. Thus, it will check the black money from further increasing, give it a proper direction and will raise a social and political feeling among the private entrepreneurs that they too have some positive role in nation-building which is of more vital importance than any other consideration. The large concessions in income-tax both in the private and corporate sectors enabled the government to achieve near target within six months only and it is expected that the target would be doubled by the time the year is completed. It is perhaps due to this financial stringency which put a limit on the size and volume of the public sector outlays on the one hand and these social and political considerations which marked the turn of the tide in favour of the private sector. Moreover, the unimpressive performance of the public sector might have given way to the private sector. It also appears reasonable to assume that neither the Central Public Sector Enterprises including the Railways are going to raise an additional amount of Rs. 14,240 crore for financing the plan as has been expected in the plan nor are they going to turn their losses into a surplus unless something miraculous occurs either in the Governments' policy or in the attitude of the labour or the concerned authority undergoes drastic changes. But then, is this the solution for the ailing public sector? Is the preference for private sector a solution to raise the quality of general masses who are poverty-stricken and in worn-out condition ? One of the main reasons of the failure of the public sector is that its management has been in the hands of those who do not possess the primary knowledge of the management of the business undertakings. They are particularly trained and qualified for the administrative purposes. Secondly, the unproductive expenditures of the public sector is so large that it renders the marginal utility of productive investment to nought. And the last but not least important is the lack of peoples' sentimental attachment to the public sector which is basically meant for the people at large. An environment should have been created so that general people may repose its confidence in this sector and may take it as their own sector contributing to their general wellbeing. But the reverse has happened.

It's ideologically slanted!

However, far from these considerations, there is one more consideration which is of paramount importance in determining the size and scale of the public sector and that is ideological consideration. This ideological consideration needs defining the concept of the socialist pattern of society. Does the socialist pattern of society mean a mixed economy ? Does our constitution warrant a socialist pattern of society in the form of a mixed economy in which both private and the public sectors will have to co-exist ? Or does it mean a slow and gradual socialisation of resources by increasing the quantitative role of the public sector ? The Review of the First Five Year Plan, May 1957, says that "the aim was not merely to plan within the existing socio-economic framework but to change this framework progressively and by democratic methods in keeping with the large ends of policy enunciated in the Constitution. The first five year plan was a step in a new direction, a step which involved greater direct responsibility for the state in promoting development and a greater degree of coordination of developmental activity in all economic sectors and at all levels". The Draft Second Plan is more clear on this point when it lays down that the

(Contd. on page 19)

Public undertakings, white elephants !

Mohd. Talha

The author analyses the existing trends in profitmaking considered as a measure of performance and efficiency of public sector undertakings. He laments that the functioning of most of the public sector undertakings during the last two decades has been very unsatisfactory. Many of them have been incurring huge losses. These enterprises, he feels, must make an appreciable contribution towards economic uplift of the country and attain 'commanding heights' in our economy, as envisaged by our planners.

THE PUBLIC SECTOR has got a place of pride in our economy. With a vital role thus assigned to the public sector, it is imperative that public sector enterprises should flourish and make their due contribution towards the economic progress of the country. In view of their socio-economic significance it is imperative to make an evaluation of their profitability as both profit and profitablity are 'must' for all business whether it is private or public sector The public sector enterprises have to make an appreciable contribution towards the economic uplift of the country. In case of public enterprises, the profitability cannot be a sole criterion to measure their efficiency and performance However, the profit and profitability promote the self-financing and capital formation on the one hand and increase the efficiency of employees on the other hand by way of better bonus reward, incentives etc. The purpose of this paper is to analyse the existing trends in profit and profitability which are considered as a measure of performance and efficiency of public sector in India.

The main aims and objectives of public enterprises can be read as follows :

Firstly, to help in attaining the rapid economic development and industrialization of the country. Secondly, to create the necessary infrastructure for economic growth. Thirdly, to attain self-reliance in strategic sector of the economy. Fourthly, to reduce inequalities of income and wealth and to insure a balance regional development which in turn could create employment opportunities. Fifthly, to prevent concentration of economic power and to mobilise resources for rapid development as well as to enforce social control on trade and industry through equitable distribution of goods and services. In the light of these objectives, it may be observed that the public sector has been assigned an important role in our economy. It is, therefore, expected that this sector has to fulfil the objectives laid down for attainment.

So far as public sector as a whole is concerned, the fact remains that it works all along and promotes the private sector in the capitalist countries creating the basic ingredients of its development and yet the criterion applied for them is always same as private sector and some time even less so. For example when there is a reduction in the import duty on some of the necessary raw materials or production equipments for the private sector, public exchequer has to suffer loss without influencing private sector, and it is immaterial whether the subsidy is paid later in terms of taxes. As far as employment conditions are concerned, compared to the wide discrepancies in the remuneration and the sweated labour the public sector units are still far better than that of private sector enterprises. In the third world countries where the process of industrialisation is still at infant stage their economic system is still free from the exploitation of their own neighbourly countries resulting

in their lack of mobilisation and generation of finance on the redistribution of their internal resources.

Investment

The total investment in the public sector is almost 60 per cent of the total Corporative investment and the same has been increasing since the beginning of 1951-52, when it was Rs. 29 crore in five units and now by the end of March 1984 it stood at Rs. 35,411 crore in 214 enterprises, showing a rise of 1,22,005 per cent. Thus, of the Rs. 172,210 crore capital outlay of the Sixth Plan, the public sector was allotted Rs. 97,500 crore, i.e. 56.6 per cent. In the industrial sector Rs. 20,407 crore was allotted for the public sector, as against Rs. 17,582 crore for the private sector. All in all, a colossal sum of Rs. 31,968 crore stands presently invested in the public sector enterprises as on March 31, 1984. The number of public enterprises increased from 5 on March 31, 1951 to 217 in March 1984, indicating an increase of nearly 4,240 per cent.

According to Five Year Plan documents, which provide figures for the public sector in a wider sense to cover all expenditure can be seen from the Table I as follows :

TABLE I

Investment in the public sector under Plan

Plans	Public sector* (Rs in crores)	Private sector** (Rs in crore)	Total	Percentage to public to total
I Plan	1,960	1,800	3,760	52.1
II Plan	4,672	3,100	7,772	60.1
III Plan	8,577	4,190	12,767	67.1
IV Plan	16,774	8,980	25,754	65.1
V Plan	44,451	16,614	60,614	73.3
VI Plan	1,11,000	46,860	1,57,860	70.3
VII Plan	1,80,000	1,70,000	3,50,000	51.4

Source

* Patriot, New Delhi, January 16, 1985, p. 3

**Laxmi Narain, Principle and Practice of Public Enterprises, S. Chand & Co. Ltd. 1982, p. 35

1 —The Hindustan Times, New Delhi, November 17, 1983, p. 11.

Data set out in Table I reveal that the total inve ment of public enterprises in India has increased fr Rs. 1,960 crore in the First Five Year Plan Rs. 1,80,000 crore in the Seventh Five Year Pl indicating an overall increase of nearly 9,083.6 cent and the rate of growth increased by nea 259.5 per cent. Similarly, the total investment private sector went up from Rs. 1,800 crore in First Plan to Rs. 1,70,000 crore in the Seve Plan, showing a rise of nearly 9,344.4 per cent w an annual rate of rise of nearly 267 per cent. Li wise, the total investment, i.e. both public and priv sector in India has increased from Rs. 3,760 cror the First Plan to Rs. 3,50,000 crore in the Seve Plan i.e. an overall increase of nearly 9,208.5 per c and annual rate of growth increased by nearly 26 per cent during the period under review. Con quently, the percentage of public sector to the to has declined from 52.1 per cent to 51.4 per cen the Seventh Five Year Plan over to First Five Y Plan. It is mainly due to higher rate of growth private sectors as compared to public sector en prises.

Profitabili

While the record of performance of the last t years is being compiled at present, the net p earned after tax during 1980-81 by these public e prises was Rs 643 lakh as against Rs. 587.31 during the previous year with 25 units making p and 29 running in loss. The Bureau of Public En prises claims that this position has now impr and more enterprises have made profits during re years. However, it has yet to compile the recor performance of last three years to confirm this p tion. Since 1980-81 at least six of the pu sector enterprises either have closed down or been amalgamated with other public units due non-profitability and for the sake of better pe mance. The Bureau is also working on the cap utilisation of each of these units to improve performance and increased production.

Table II shows the profitability of public se enterprises in India between 1973-74 to 1983-

TABLE II

Profitability Profile, 1973-74 to 1983-84

(Rs in cro

	1973-74	1976-77	1977-80	1982-83	1983
No. of Enterprises	114	149	169	193	2
Capital Employed	5,271	11,057	16 590	26,590	27,8
Pretax profit (after setting of loss of lossmaking units).	148 64	420 75	225 13	1 545 37	1,485
Percentage of gross profit to capital employed	6 3	9 3	7 6	13 1	1.1

Source : **Financial Express, New Delhi, June 15 1985, p. 5.**

Data set out in Table II reveal that the total number of public enterprises went up from 114 in 1973-74 to 201 in 1983-84, indicating an overall rise of nearly 76.3 per cent and the rate of growth has increased by nearly 6.9 per cent. Similarly, capital employed has increased from Rs. 5,271 crore in 1973-74 to Rs. 29,896 crore in 1983-84, showing an overall increase of nearly 467.1 per cent and the rate of growth went up by nearly 42.4 per cent. Likewise, the profitability of public sector in India has increased from Rs. 148.64 crore in 1973-74 to Rs. 1,485 crore in 1983-84, i.e. an overall increase of nearly 899.4 per cent and the rate of growth has increased by nearly 81.7 per cent, after deduction of depreciation and interest, the percentage of gross profit to capital employed went up 6.3 per cent in 1973-74 to 11.9 per cent in 1983-84. This was mainly due to higher level production, productivity, efficiency and better profitability of public sector enterprises.

In 1983-84, the profit before tax declined by Rs. 59.8 crore with a figure of 3.8 per cent, as compared to 1982-83. The profit before tax declined due to higher interest charge during 1983-84 and the net profit dropped because of increased provision for income tax. Against an amount of Rs. 1,922.74 crore in 1982-83, the provision for interest in 1983-84 worked out to Rs. 2,084.65 crore i.e. an increase of nearly Rs. 161.91 crore with a figure of 8.4 per cent Similarly, the income tax provision also showed a hike of Rs. 310 crore with a percentage of nearly 33 3 from Rs 928.49 crore in 1982-83 to Rs. 1,238.39 crore in 1983-84.

The public sector ratio of gross profit of capital employed also declined by nearly 1 2 per cent, from 13.1 per cent in 1982-83 to 11 9 per cent in 1983-84 This was a significant level and was achieved despite sudden jump in cost on account of depreciation and wage structure revision In Table III and IV below the list of top ten public enterprises making profit and loss is given in the year, 1983-84

TABLE III

Top ten profit making Enterprises in India (1983-84)

Sl No.	Name of Enterprises	Rs. in Crores	Percentage to total
1	Oil & Natural Gass Commission	1,607 66	53 3
2	Oil India	197 95	6 5
3.	Indian Oil Corporation	144 04	4 8
4.	Bharat Heavy Electricals Co	75 04	2 5
5.	Neyvli Lignite Corp.	62.97	2.1
6	Central Coalfields.	69 83	2.0
7	State Trading Corp of India.	59.83	2 0
8.	Air India	57.39	1.9
9.	Rashtrya Chemical & Fertilisers	50.05	1.6
10.	Indian Airlines	46 35	1.5
	Total for above top 0 Enterprises.	2,361 76	77 2
	Total for other 100 profit making Enterprises.	655 96	22.8
	Total for 110 profit making Enterprises.	3,017.62	100.0

Source . As Table II

TABLE IV

Top ten Loss-making Enterprises (1983-84)

Sl. No.	Name of Enterprises.	Rs. in Crores	Percentage to total
1.	Steel Authority of India	214.33	14.0
2.	Bharat Coking Coal.	191.15	12.5
3.	Eastern Coalfields.	127.88	8.3
4	Delhi Transport Corp.	101.12	6.6
5.	Fertilisers Corp. of India	83 16	5.4
6.	Hindustan Fertilisers Corp	72 40	4.7
7.	Kuderemukh Iron Ore Co.	69 69	4.5
8	Heavy Engineering Corp	51 90	3.4
9	Shipping Corp. of India	50.55	3.3
10	Bharat Aluminium Co	37 94	2.5
	Total for above 0 Enterprises	1,000 32	65.20
	Total loss of other 81 Enterprises	532 83	34.8
	Total loss incurred by 91 loss-making Enterprises	1,533 15	100 0

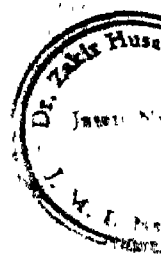
Source : As Table No. II.

In terms of profit, the top ten enterprises accounted for 77.2 per cent of the total profit earned by 110 enterprises during the year 1983-84. From the Table III it emerges that Oil & Natural Gas Commission holds top position (Rs. 1,607 crore) with a percentage of 53.3. Oil India has got second place (Rs. 197.95 crore) with a figure of 6.5 per cent, Indian Oil Corporation was accounted third position (Rs 144.04 crore) with a figure of 4.8 per cent, Bharat Heavy Electricals Co. ranks fourth place (Rs. 75.04 crore) with a percentage of 2.5, Neyveli Lignite Corp. had fifth place (Rs. 62.97 crore) with a figure of 2.1 per cent, Central Coalfields holds sixth position (Rs 60.48 crore) with a percentage of 2.0, State Trading Corp. of India has got seventh place (Rs. 59.83 crore) with a figure of 2.0 per cent, Air India had eighth place (Rs. 57.39 crores) with a percentage of 1.9, Rashtriya Chemicals & Fertilisers ranks ninth place (Rs. 50.05 crore) with a figure of 1.6 per cent, Indian Airlines holds tenth position (Rs 46.35 crore) with a percentage of 1.5. The total profit earned by 110 enterprises during 1983-84 was Rs. 3,017.62 crore, whereas the top ten enterprises earned pretax profit of Rs. 2,361.67 crore and percentage to total pretax profit earned by profit-making enterprises was 77 2 per cent, the other 100 enterprises earned profit of Rs. 655.96 crore with a figure of 22.8 per cent.

Loss-making enterprises

From the Table IV it can be seen that the top ten loss-making enterprises accounted for 65.20 per cent of the total loss incurred by 91 enterprises during 1983-84 The top ten loss-making enterprises are the following :

Steel Authority of India holds top position (Rs. 214 53 crore) with a percentage of 14, Bharat

(Continued on page 28)

Public sector units must be viable

Dr. K. C. Mishra

Though established basically to achieve commanding heights of our economy, the public sector undertakings cannot altogether overlook the profit motive factor. In this article the author suggests various steps to manage the public sector undertakings more efficiently so that they could generate enough surpluses to prove their economic viability. The author feels, on the threshold of the 21st century, the public enterprises chiefs need make tremendous efforts to enable their units to make valuable contribution to the balanced regional development, removal of poverty and equitable distribution of income and wealth.

THERE IS NO DENYING the fact that the public enterprises in India have attained a place of pride with their proliferation in diverse industrial and commercial fields. During the initial period of its inception, they were instructed to look forward in fulfilling the national policy of socialistic pattern of society and not to worry in terms of profit. But subsequently, their performance was judged in the normal manner of profit like the private sector. On January 26, 1986, the Industry Minister, while speaking at a seminar, said "it is the basic obligation of the public sector units in the present circumstances to generate adequate surpluses for proper upkeep of plant and machinery, upgradation of technology and expansion. They can't afford to incur losses and make themselves a draft on the exchequer". The noted economist Prof. V. K. R. V. Rao is of the opinion that the public sector managers should behave like the managers of private undertakings and should make efforts to run their units on commercial lines.

The profit factor

To infer, while it is true that profit motive can't be the sole or even the principal objective of public enterprises, it is misleading to say that it is of no relevance. It is similar to saying that since a man can't subsist on vitamins only, vitamins have no relevance to his diet.

A spate of reports appearing in the press recently, giving a rosy picture of achievements (profit figure) of a few public sectors, makes no sense to me to say that the public sector undertakings have hiked their profit figure this year as compared to last year. For those of us who know their structures and workings this is really misleading When a particular sector earns profit the other sector equally contributes to losses. What the public is interested to know is what each unit has . done ? By the end of 1984-85 the Central Government alone had invested no less than Rs. 36,949 crore in its industrial and commercial undertakings but the aggregate net yield was a petty 2.59 per cent. Further, the SAIL (Steel Authority of India Ltd.) having huge capital investment of about Rs. 5,800 crore had projected a dismal picture of its performance during the first six months of 1985-86. When it achieved 88 per cent of its alleged capacity between October 1984 and March 1985, it could achieve only 55 per cent between April and September 1985. So the sharpness of the focus should be on individual performance and not on collective performance.

And threat of privatisation

The Seventh Plan envisages a total public sector outlay of Rs. 1,80,000 crore of which Rs. 95,534

ore has been earmarked for the central plan at 984-85 prices. The government is firm to take steps improve the working environment of the public nterprises, and improve their profitability. At this ncture, if we look back, we can be sure that a queeze on the public sector is already in full stream nd the sector in which hitherto only public sector perated are being thrown open to the private sector. otable is the oil refining, in Schedule A of the Industrial Policy Resolution, an area reserved exclu-vely for the operation of the state has been thrown pen to the private sector. The Department of Mines as set up an "Experts Committee" to suggest measures "for quicker exploitation of small mineral deosits", following the recommendation of the Mineral Advisory Council which said that each reserved rea be examined "on merit for releasing it for exloitation by the private sector". Even the bureaucrats are considering bringing an amendment to the ndustrial Policy Resolution of 1956 to throw open chedule A industries to the private sector.

To tackle with the unimpressive performance of nany public enterprises and the threat of move owards PRIVATIZATION, I think the public enterrises chiefs have to shoulder a tremendous challenge on the threshold of the 21st century and to rove that it is their unique effort which could face ny threat. They have to earn minimum surplus to enure the economic viability. It requires taking meaures to avoid delay in project completion, efficient tilization of resources and reducing avoidable social verheads Also studies should be undertaken to find ut causes of low capacity utilization and take remedial actions.

Government's role

The role of the government in discharging its managerial responsibilities in respect of public enterprises must be clear. Its bureaucratic interference in running the enterprises must be limited. It is necessary o strengthen the autonomy of public enterprises and free their chief executives, once appointed, from ministerial control which otherwise poses a threat to the chief's judgement and undertaking calculated risks thus suffering accountability to the public. If the government means business, it should spare no time to follow the policy of other democracies, notably Britain, France and Italy, where the authorities have resolved it by largely limiting the role of the administering ministers to answering questions in parliament, appointing chiefs for a minimum period of five years and delegating to them almost all the powers necessary to run the enterprises on commercial lines.

The state of poor industrial relations has become the Waterloo of many a competent manager for the successful running of their enterprise. The government should see that any commitment made by the manager for restoring healthy industrial atmosphere is not subject to its approval To note a few more challenges, the public enterprises should take up diversified activities like manufacturing mass consumption goods and essential commodities, to adopt latest technology to cope with technological change and to enter international market to earn more and more foreign exchange.

Lastly, the Government should demarcate the line between the two philosophies of profitability and meeting the social obligations. The role of public enterprises should also be judged in terms of their contribution to balanced regional development, equitable distribution of income and wealth, removal of poverty and solving unemployment problems, etc.

(Continued from page 14)

task before an underdeveloped country is not merely to get better results within the existing framework of economic and social institutions but to mould and refashion these so that they contribute effectively to the realisation of wider and deeper social values. These values and basic objectives have recently been summed up in the phrase "socialist pattern of society". Draft Third Five Year Plan states that in December 1954, Parliament decided that the broad objective of economic policy should be to achieve the "socialist pattern of society". Thus, only development and not ideological consideration is the thing to be kept in mind while formulating the plan, the Seventh Plan is a good one and even well-balanced except that it should have been even bigger and bolder plan with 7 to 8 per cent growth rate per annum, the possibility and desirability for which exists well within the capacity of the economy. ☐

Over 50 Navodaya Vidyalayas to be opened in 1986-87

It is proposed to open 50 to 60 Navodaya Vidyalayas during the current financial year. For this purpose 41 districts spread over various States and Union Territories have already been identified and approved for the establishment of these Navodaya Vidyalayas.

The future programme for establishment of Navodaya Vidyalayas includes opening of 120 to 150 schools in 1987-88, 120 to 150 schools in 1988-89 and the remaining in 1989-90.

Two schools, one each at Jhajjar (district Rohtak, Haryana) and at Amravati (district Amravati, Maharashtra), have already started functioning from March this year. Recurring expenditure on a Navodaya Vidyalaya in the first year is estimated at Rs. 12.60 lakhs, which will increase as additional classes are opened ☐

Social responsibility of state enterprises

Dr. S. N. Bansal
&
Dr. V. K. Agarwal

Should the viability of public sector enterprises be judged from the amount of profits to be earned by them? No. According to the author, if they do not earn any significant profit but, at the same time, are able to serve their social goals, they should be regarded as the ones fulfilling their social responsibility. However, he feels, every effort should be made to improve the percentage of their profitability and capacity utilisation. Because, he says, they have before them the stupendous task of quadrupling their contribution from Rs. 9,395 crore during the Sixth Plan to Rs. 35,485 crore during the Seventh Plan thus making their valuable contribution in the efforts to overcome resource contraints during the Seventh Plan.

IN INDIA, the Government has been attaching an added significance to the expansion of public sector mainly for removing the regional imbalances and for strengthening and safeguarding the overall interest of the society. After Independence the role of the state enterprises increased manifold. The number of public sector units in India with their massive capital investment has increased significantly. The achievements of the state enterprises in India have been satisfactory particularly as regards the diversification of field and generation of internal resources. They have contributed a lot to the economic development of the country by increasing the national income, by earning considerable foreign exchange, by developing basic and capital goods industries and helping in the rehabilitation of sick mills and also their operation on economic lines. No doubt, state enterprises in India have not been able to earn as much profits as do the private sector units Still they have observed successfully their social responsibility and have achieved their targeted social objective to a significant extent. State enterprises in India have many social and economic challenges to face and they are to be faced effectively for making them an important instrument in building a self-reliant and self-propelling economy dedicated to a socialistic pattern of society. In certain social and economic spheres they have yet to prove their worth and there is a 'Herculean task' before them.

These days, state is no more a passive observer of the economic process, it has emerged as an active participant, taking upon itself the role of a protector, controller, and guardian of the citizen and the entrepreneur. Prof. A H. Hanson has commented, "Public Enterprises without a plan can achieve something, but a plan without public enterprises is likely to remain on paper only." In the words of Jawaharlal Nehru, "The Public Sector represents a dynamic urge to go towards the socialistic society which we are seeking to build up. The public sector has to grow. It has a strategic importance."

Needs and objectives

The needs and objectives of State Enterprises in India may be summarised as under :

1. Rapid economic development of the country,

2. Construction of infra-structure for balanced development;
3. Check on the concentration of wealth and economic power;
4. Import substitution and export promotion;
5. Proper development and expansion of private sector;
6. Creation of enormous employment opportunities;
7. Arrangement of adequate finances for development programmes and nation-building activities;
8. Acquisition of sick units and their better management;
9. Balanced regional development and correcting regional imbalances;
10. Social control on long-term capital with the help of public financial institutions.

Commanding heights

In the ultimate analysis, as Jawaharlal Nehru always reminded us, the battle against poverty and backwardness can be won only through massive industrialisation. Planning has created a strong base for a modern, self-reliant industrial economy. We have a highly diversified structure with an impressive range of products, many embodying a high level of technology. We have created a wide entrepreneurial base. The public sector has acquired a commanding presence. It has played a pioneering role in introducing modern technology, in taking development to backward areas, in creating a wide range of industrial and technological skills and in curbing concentration of economic power. To it goes the credit of initiating large scale development of indigenous science and technology. The next phase of industrial revolution in India poses new challenges for the public sector. It must lead the complex and demanding process of absorbing and developing new technologies. It has to master the imperatives of modernisation. It has to first establish and thereafter spread a new work culture in industry based on productivity, efficiency and quality. And it has to generate large surpluses for investment. As in the past so in the future, the public sector will occupy the commanding heights of our technologically modern economy and industry.

Economic performance

Before Independence, the role of State enterprises was limited to a very small area. It was only after Independence and through Planning that the State Enterprises assumed an added significance and increasing role on Indian Economy. The number of State enterprises which was only 5 in 1951 (capital investment Rs. 29 crores) increased to 48 in 1961 (capital investment Rs. 953 crores), to 122 in 1974 (capital investment Rs. 6,237 crores), to 176 in 1979 (capital investment Rs. 15,602 crores), to 168 in 1980-81 (capital employed as Rs. 18,207 crores) and to 193 in 1982-83 (with capital employed as Rs. 26,590 crores). The larger Public Enterprises numbered 217 as on April 1, 1984, and investment in 214 of these totalled Rs. 35,411 crores. (Commerce, April 6, 1985).

As regards the performance of Public Sector enterprises they suffered a set back in 1983-84. Net profit after tax of 201 running public Enterprises amounted to Rs. 246 crores in 1983-84 as against Rs. 446 crores in 1981-82 and Rs. 614 crores in 1982-83. While, the net profit before tax of profit making enterprises increased from Rs. 2,523 crores in 1982-83 to Rs. 3018 crores in 1983-84. However, the losses of the loss-making units widened from Rs. 981 crores to Rs 1533 crores during the same period under review. According to provisional estimates during the year 1984-85, of the total public sector units 105 units made a net profit of Rs 2261 27 crores, while 84 enterprises incurred loss of Rs. 1305 15 crores. Overall net profit during the year 1984-85 was Rs. 956.12 crores. (Commerce, January 4, 1986). Never in the past had the public sector contribution exceeded 7 per cent of the financing of the public sector outlays. All of a sudden the Public Sector units are faced with the task of nearly quadrupling the absolute amount of contribution from Rs. 9395 crores during the Sixth Plan Rs. 35,485 crore during the Seventh Plan which amounted to a tripling of contribution as a percentage of Public Sector outlays from 6.8 per cent (estimated) during the Sixth Plan, to 19.7 per cent (projected) during the Seventh Plan (Commerce, January 5, 1986)

The aggregate value of production of nineteen manufacturing public sector undertakings under the Department of Public Enterprises (erstwhile Department of Heavy Industry) during September 85 was Rs. 248 47 crores which was 20 per cent higher compared to the production of Rs. 267.04 crores achieved during the same month of the previous year and 92 per cent of the target of Rs. 271.23 crores. Public Sector Undertakings which exceeded their respective cumulative targets (April-September'85) were Maruti Udyog Ltd. (105 per cent), Bharat Heavy Plate and Vessels Ltd. (104%) and Tungbhadra Steel Products Ltd. (103 per cent) Cumulatively, production during April—September '85 was valued at Rs. 1302.27 crores which represented a growth of 27 per cent over the production of Rs. 1022.00 crores achieved during the corresponding period of 1984-85 (April—September '84). Production of Rs. 1302.27 crores achieved during April—September '85 was 92 per cent of the target of Rs. 1412.01 crores. In addition to the above the cumulative turnover of Engineering Projects (India) Ltd. during 1985-86 upto September '85 was Rs. 29.50 crores, 63 per cent of the target of Rs. 47.18 crores. (Lok Udyog BPE. December 1985)

Table 1

Profile of Public Enterprises (1979-80 to 1983-84)

	Unit	1979-80	1980-81	1981-82	1982-83	1983-84 (Provisional)
1. Number of running public enterprises	Number	169	168	188	193	201
2 Capital Employed	Rs Crores	16182	18207	21935	26526	29896
3 Turnover	Rs Crores	23290	28635	36482	41989	47294
4. Gross Margin (Profit before depreciation' interest, and tax)	Rs. Crores	2055	2401	4012	5184	5775
5 Depreciation*	Rs Crores	826	983	1358	1719	2206
6. Gross Profit before interest and tax	Rs. Crores	1229	1418	2654	3465	3569
7. Interest	Rs. Crores	1004	1399	1630	1923	2084
8. Net Profit before Tax	Rs Crores	225	19	1024	1542	1485
9. Tax	Rs. Crores	299	222	578	928	1239
10. Net Profit after tax	Rs Crores	– 74	—203	446	614	246
11 Internal resources generated	Rs Crores	1030	1225	2261	2753	3282
12. Gross profit to Capital employed	Per Cent	7 6	7 8	12 1	13 1	11.9

*Includes deferred revenue expenditure.

As regards the production, the cumulative production during the first seven months of 1985-86 was to the tune of Rs. 34756.7 lakhs as compared to Rs. 29104 7 lakhs during the corresponding period in the year 1984-85 This is about 19.42 per cent higher than the production achieved during last year. The Public Sector units record 10 1 per cent higher production during October 1985 as compared to October 1984. The units which showed significant improvement in production during October 1985 over October 1984 are Hindustan Photo Films Manufacturing Co. Ltd. (at 133 37 per cent), Instrumentation Ltd. (at 100.0 per cent), and national Newsprint of Paper Mills Ltd. (at 109 per cent of the installed capacity).

The target achievements of major groups of industries during the first nine months of 1984-85 reveal the following position : steel ingot 87 per cent, saleable steel 96 per cent, coal 96 per cent, Lignite 109 per cent, Zinc 80 per cent, lead 60 per cent, copper 94 per cent, iron ore 101 per cent, fertilizers 113 per cent, petroleum crude 97 per cent, petroleum throughout 104 per cent and cement 84 per cent.

On the export front, the public enterprises have achieved higher earnings reaching a level of Rs. 5418.14 crores in 1983-84 from Rs. 4747 crores during the proceeding year and Rs. 1912.98 crores five years ago.

A profile of Public Enterprises from 1979-80 to 1983-84 has been given in Table No. 1 with a view to giving a comparative picture of the development of the Public Sector in the country. In Table No. 2 the figures of the profits of ten profit making companies have been exhibited :

Table 2

Top Ten Profit-Making Enterprises (Profit Before Tax) of 1983-84

(Rs. in Crores)

Sl No	Name of Enterprises	Pre-Tax Profit (1983-84)	Percentage to Total Pre-Tax Profit earned by Profit-Making enterprises
1	Oil & Natural Gas Commission	1607 66	53.27
2	Oil India Ltd	197 95	6.56
3.	Indian Oil Corpn Ltd	144 04	4 77
4	Bharat Heavy Electricals Ltd.	75 03	2.49
5	Neyveli Lignite Corpn Ltd	62 97	2.09
6.	Central Coalfields Ltd	60 48	2 00
7.	The State Trading Corpn. of India	59.83	1 98
8	Air India	57 39	1.90
9	Rashtriya Chemicals & Fertilizers Ltd	50 05	1 66
10	Indian Airlines	46 35	1.54
	Total	2361 75	78 26
	Total Profit earned by Profit Making Enterprises.	3017 71	100 00

Concept of social responsibility

The new concept of social responsibility signifies the responsibility and accountability of a business and industrial concern not only to a particular party but to all concerned. In the words of H. R. Bowen,

"Social Responsibility of business is to pursue those policies, to make those decisions or to follow these lines of actions which are desirable in terms of the objective and values of our society." Koontz and O' Donnell define the concept of social responsibility as, "Social responsibility in the personal obligation of everyone as he acts in his own interest to assure that the right and legitimate interest of all others are not impinged.' Thus, all business and industrial concerns run and function in the society and hence they should observe their responsibility to the society as a whole and not only to the businessman or to the industrialist. The business has to see the interest of all persons in the society. Making money and keeping the activities limited to mere earning of profits can never be tolerated by the society in the present day changed circumstances and democratic world. To quote Mr. Urwick "profit can be no more objective of a business than betting is the objective of race, making a score the objective of cricket or eating is the objective of living." In this context, Mr. Abraham Frank has very rightly commented, "The object of business is to maintain an equitable and workable balance among the claims of various directly interested groups—shareholders, employees, customers and public at large."

Since the very beginning of twentieth century, science has permeated the sphere of management, and the modern management has come to be called an 'experimental science'. Thus the new concept of management or the scientific management has also emphasised the business and industry to undertake only those works which are beneficial to all the concerned parties. Mr. William Spriegel has advocated the concept of 'profit through service' and he is of the opinion, "The concept of 'profit through service' is one that is most likely to be realised over a period of time. It is good business and will contribute to the earning of a profit." Thus State Enterprises should not keep the earning of profits as their sole objective, rather they should run their operation on the basis of social objectives. If they are earning no significant profits and at the same time are able to serve their social goals, they should be regarded as fulfilling their social responsibility. Their success or failure should not be merely judged on the 'test of profit earning capacity'. Some people criticise 'State Enterprises that they are white elephants and cause excessive burden to the rational exchequer, but they forget that merely earning profits can never be the sole objective of State Enterprises. They have a different field of operation, a different objective and altogether different conditions in which their operation is run. However, there is every possibility and scope of improvement in their profitability percentage and also in the percentage of their capacity utilisation. curtailing overheads and observing cost-consciousness and time-consciousness would be an important instrument for their betterment and a turning point for fulfilling their social responsibility

Responsibility and achievements

In the development of Indian Economy the public sector has played an important role and has contributed its co-operation in the following ways : by increasing effectively the national income of the country; by earning considerable foreign exchange; by developing basic and capital goods industries; by developing undeveloped and backward regions; by contributing to the attainment of the goal of self-reliance; by helping in the rehabilitation of sick mills and their operation on economic lines; and by contributing to the finance of the government and increase in non-tax revenues.

The social achievements for public enterprises in India may be summarised as under.

1. The public sector in India has set up a number of basic key industries which would have not been possible through the private sector.

2. The Public Enterprises in India have also contributed a sizeable amount to the foreign exchange reserves by promoting export and containing imports.

3. Unemployment is a curse. It creates a sense of frustration in the minds of the people, harms their dignity and causes tension in the society. It gives birth to a large number of bad, dishonest, idle, corrupt and criminal persons. It wrecks the political fibre of the country and renders the whole society crippled. A nation which fails to provide employment to its citizens can never claim to be a 'welfare state' in a true sense. Truly speaking Public Enterprises have significantly increased employment opportunities in the country. The number of persons employed in public enterprises was only 17.03 lakhs in 1978-79 which increased to 18.39 lakhs, in 1980-81; 19.39 lakhs in 1981-82 and further to 20.09 lakhs in 1982-83.

4. They have also been helpful in generating the internal resources of the nation. The internal resources as generated by the public enterprises stood at 906 crores in 1978-79, 1225 crores in 1980-81; Rs. 2261 crores in 1981-82; Rs. 2753 crores in 1982-83 and Rs. 3282 crores in 1983-84.

5. The public enterprises in India have also made a significant contribution to the balanced economic development in the country. With this aim in view, all the public sector integrated steel plants have been set up in different States for ensuring a balanced regional development.

6. The public enterprises in India have been helpful in the diversification of the country's industrial structure.

7. The nationalisation of major commercial banks, life insurance and general insurance business in India has given the public sector a commanding position in the credit and investment system of the country. Now the internal resources and institutional credit

have been directed towards the priority sector and non-banking regions. The percentage of institutional finance to agriculture and priority sector has also increased considerably.

The nationalisation of 14 major commercial banks in July 1969 was an important landmark in the history of Indian banking. The aggressive branch licensing policy supported by the 'Lead Bank Scheme' has brought about a phenomenal expansion of bank branches. The number of bank branches increased from 8,262 at the June-end 1969 to 51,385 by end of June 1985. The number of bank branches in rural areas which at 1832 formed 22.2 per cent of the total in June 1969, jumped to a high figure of 30,177, constituting 58.7 per cent of the total at the end of June 1985. Of the total 43,123 bank branches opened during the period 1969 to 1985, 28,345 (Constituting 65.7 per cent), were in the rural areas alone. Table No 4 exhibits the relevant data of bank branches.

2. The Public Enterprises in India possess hu capital investment and for viability they should yie at least a minimum general percentage of return the capital employed. The public sector units suffe ing huge losses will have to be converted into pro earning units and economically viable ones. Loss should be contained and minimum return on capi employed should be ensured. The profit-yielding sta should also come in lesser time. They will have observe cost-consciousness and time-consciousness.

3. The public enterprises will have to improve th percentage of capacity utilisation as most of the pu lic sector undertakings are working below their i stalled capacity. Low capacity utilisation has been perennial problem of the Indian Public Sector. T percentage of capacity utilisation may be well visual ed from te following table No. 4.

Table 3

Number of Commercial Bank Branches

	No. of Bank Branches					
	As on 30-6-1969		As on 30-6-1985		Net Increase in Branches	
	No.	% Share	No.	% Share	No.	% Share
Rural	1832	22 2	30177	58 7	28345	65
Semi-Urban	3322	40 2	9747	19 0	6425	14 9
Urban	1447	17 5	6217	12 1	4770	11
Metropolitan	1661	20 1	5244	10 1	3583	8..
Total	8262	100 0	51385	100 0	43123	10(

And the challenges

The public enterprises in India have contributed a lot in the pace of rapid industrialisation of the country and have given the poor masses the share of industrial development and sound economic growth. Looking to our need, they have yet to prove their worth in many fields of social goals and in many spheres of the economy. The main social and economic challenges before public enterprises are as under:

1. Even after more than three decades of economic planning, more than 40 per cent people in India are living below poverty line. The public enterprises in India will have to come forward for providing better employment opportunities to the poor and the unemployed

Table 4

Capacity Utilisation · 1983-84

Range	Financially weak units Surveyed		All Units Surveyed	
	Number	Per Cent	Number	Per Ce
More than 75%	14	24.2	88	51.
Between 50% & 75%.	26	44 8	49	28.
Between 25% & 50%.	12	20 7	.	.
Below 25%	6	10 3	35	20.
Total	58	100.0	172	100.

Commerce, January 4, 1986

4. Public sector in India enjoys little public faith and, for this reason, some people have started blaming public sector as 'nobody's sector'. Public enterprises will, therefore, have to work effectively and economically to restore public faith in them.

5. They should also come forward for putting an effective check on the concentration of income, wealth and economic power by ensuring a better participation of the poor masses in the pace of rapid economic development.

6. The public enterprises in India have also been lacking in developing the managerial and technical skill and resources. These units, being the key unit and having huge social responsibility, should develop the managerial and technical skill and resources. They should also put an example before the private sector by implementing effectively the schemes of social security, labour welfare and workers' participation in management.

Suggestions for social responsibility

The following suggestions may be offered for improving the working and social responsibility of public enterprises in India.

1. There should be cost-consciousness and time-consciousness to observe economy and to bring these units to profit-yielding stage within an anticipated time.

2 There should be a healthy competitive spirit between various public undertakings to reduce the cost of production and improve the quality of their products.

3. New units should be established or old units should be taken over or nationalized purely on economic principles They should not be prone to political bias in any way.

4. There should be fuller, utilisation of installed capacity.

5. The quantum of social overheads should be curtailed effectively.

6 Promotion chances and other benefits should be provided to the employees on the basis of their work and efficiency and not on the basis of their seniority. There should be a regular and effective evaluation of their work

7. Better public relations and industrial relations should be restored and adequate incentive provided to the workers to infuse in them the spirit of loyalty and sincerity. Red-tapism should be controlled and minimised.

Epilogue

The growth and expansion of public enterprises is a necessity for the economic development of the country The public enterprises are, however, only the means and not an end in themselves. Nabagopal Das has commented, "there is no magic in the words public enterprises, and more extension of the public sector does not provide an answer to the problem of entrepreneurship production and a fair deal for consumers." There is an urgent need for removing redtapsim, producing good quality products at a cheaper rate, exempting the units from political interference and appointing personnel purely on the basis of ability and merit. The state enterprises have many social and economic challenges before them and they have to be faced effectively for restoring public faith in them. In certain social spheres they have to do a lot and have yet to prove their worth.

The Seventh Plan would be laying an added stress on increasing the capacity utilisation percentage in various industries and also in the public sector undertakings. In the draft of the Congress Working Committee as resolved in the recent Congress Centenary meet held at Gandinagar, Bombay, it is said, "further progress on the path of industrialisation will depend on the extent to which India's Public Sector masters the problems posed by a variety of vicissitudes, both internal and external"

Earthquake observation project

Realising the need of constructing earthquake resistant buildings, a coordinated project for observing seismic forces is being implemented by the Department of Science & Technology as a high priority area. Eighteen permanent seismic observatories are planned to be established under this project in two critical sectors of the Himalayan region Five of these are already functioning.

With the operationalisation of the seismic observatories planned under this project, it will be possible to monitor all earthquakes of magnitude 4.0 or more in the Himpalayan region. In addition, two arrays of strong motion accelerographs have been set up in Shillong and Kangra areas. □

Leprosy eradication programme extended to 32 districts

The leprosy prevalence rate per 1000 population has declined from 16.2 to 4.0 in Srikakulam and from 13.1 to 3.5 in Ganjam district. These two districts were chosen for the Multi Drug Treatment (MDT) under the National Leprosy Eradication Programme (NLEP)

The National Leprosy Eradication Board has decided to extend the MDT to 32 highly endemic districts in the country. Laboratory services will be strengthened by creating additional posts of technicians in all MDT districts. In Lakshdweep all leprosy cases will be brought under MDT to arrest the disease by 1988-89.

Why do we prefer public sector?

D. K. Pandiya

Public sector was given primacy to serve certain social purposes. Like other enterprises it is expected to earn profits but not indulge in profiteering. Its basic obligation is to generate adequate surpluses for proper upkeep of plant and machinery, upgradation of technology and expansion. The author here commends the role of the public sector in setting up industries in the remotest corners of the country so far untouched by any industrial activity simply because of its commitment to remove regional imbalances. It is also ready to face challenges in the spheres where the private sector has either failed or is reluctant to enter.

THOUGH THE STATE ENTERPRISE has now become a world wide phenomenon, in Indian perspective it bears more weight probably because of our new experiment of 'mixed economy'. Since its existence the Public Sector in India has made a tremendous rise but at the same time its criticism probably mainly on account of the losses suffered by it, too is on an increase. This requires a critical dissection of the whole situation.

At the initial stages the Public Sector was kept under impression that their goals are almost different from those of Private Sector. Speaking namely the Public Sector was told, rather assured, that they are not to worry in terms of profit earning. About their doings they were expected to develop an infra-structure for industrialisation of the country, to remove unevenness in the regional development, to provide more and more employment to the people, to initiate in establishing a socialistic pattern of society mainly by recognizing human factor in industries, to establish industrial democracy, to enter into monopolistic industrial scene, to curb anti-social practices and profiteering, to get themselves ready as a stronger substitute of Private Sector in case of their failure and to create a sense of competition with Private Sector for the betterment of consumers and also the workers.

Thus if it is said that to earn the profits was not one of the objectives of Public Sector, the discussion on profitability of Public Enterprises can hardly be fruitful.

Profits not profiteering

Yes, the Public Sector too can be supposed to earn the profits but not for profiteering. In the words of Industry Minister Mr. N. D. Tiwari, which he delivered while inaugurating an Indo-French Seminar on the role and management of the Public Sector recently, "It is the basic obligation of Public Sector units in the present circumstances to generate adequate surplus, for proper upkeep of plant and machinery and upgradation of technology and expansion. They cann't afford to incur losses and make themselves draft on the exchequer'. It is true also because Public Sector Enterprises have already crossed the infantile and juvenile age of entitlement for concessions and protection. Now the time has come when they are to justify their existence for acquiring self reliance and playing the desired role for social benefits. The present attitude of the government is to exhort them for survival. If they fail to do so they will create greater dissatisfaction among the people and provoke thinking for privatisation.

The problem which Indian Public Sector is facing is that they are not even able to maintain the profits to the extent by which they could keep themselves technologically up-to-date, to have the little additions, modifications and expansions with their own finances. But what is more painful is a number of Public Enterprises are showing huge losses making a draft on the exchequer.

Leaving this aspect of losses|profitability of Public Enterprises if we have a discussion on its profitability in terms of the fulfilment of its goals this too will be

worthwhile, because the profitability at last should be assessed in terms of the goals allotted to it.

Infrastructure

Thus in this way first comes the task of developing an infrastructure for industrialization of the country. This is known to all of us that in the last 40 years because of Public Sector's sincere efforts we have developed a line of basic industries. In this regard Railways, Transportation, Communication, Steel and Mines, Power and Electricity, Petroleum, Heavy Electricals, Banking and Financial Institutions and centres for improving technical know-how for Industrial Sector and Fertilizers and Irrigation for Agricultural Sector, can be the examples. If we compare the today's achievements of all these industries from the time these were established, we may say that the position, if not satisfactory, is also not very far from being satisfactory.

Removing regional imbalances

Second in the list may be the task of removing regional imbalances of the country. In this regard it can be mentioned with pride that today's India has more balanced industrial development compared to 1950s. It is only Public Sector which deserved the credit for taking steps to establish the industries avoiding the traditional centres for industries like Ahmedabad, Bombay, Calcutta, Kanpur and Madras etc. Today's India in which even the remotest corners of the country like Nagaland in North East and Srinagar in North most are not untouched by the state efforts, could come to map perhaps mainly because of Public Sector's commitment to remove regional imbalances. If the economy of the various states (Provinces) in the country could be improved and self reliant, it is only Public Sector which should be praised.

More jobs

Thirdly we may examine the object of providing more and more employment to the people of the country. As we all know, among various problems which we are facing, one is to provide the employment to the increased hands. It may be an amusing mention that the target of increasing production and productivity we have implemented in 'giving-birth' sector also. On this count too public sector has succeded upto certain extent partly due to its efforts to avoid mechanisation and automation which leads to retrenchment and partly by speeding-up the economic and industrial cycle which generates more employment. Instances can be quoted when the decisions to establish certain industrial units were based mainly on consideration to use the manpower of certain region and the targets of removing regional imbalance and others were kept secondary in the list. Not to say that by providing employment to more and more people public sector could also be successful in removing a sense of discrimination which could have been based on caste creed, sex and region.

Giving labour their due

Fourth count of discussion may centre around the task of establishing a socialistic pattern of society mainly by recognizing human factor in industries. It was only Public Sector of the country which practically granted the dignity of labour which was due for them. Instances can be quoted of implementing a number of acts which were left unimplemented by the other sector. This aimed mainly to give the labour their dues in order to establish a socialistic pattern of society. A reference can also be made of active and effective implementation of the schemes like workers' participation in Management and Collective Bargaining which were kept mere on paper by the other sector. The very purpose of giving such scheme|ideas was to grant a sense of freedom and dignity among the workers and helping them in creating a sense of self confidence. After an honest comparison of the two situations we find that the Public Sector is successful upto a large extent in its this object, though much is yet to be achieved in this reference.

Establishment of industrial democracy comes fifth in the list of objectives of public sector. An analysis of the efforts made by Public Sector Enterprises in this regard depicts the picture that upto whatever extent the industrial democracy could be popular among the industrial parties, it could mainly be because of public sector's initiative. Making a reference to it, we may recall of the setting up of various bi- and tripartite forums in shape of different committees, such as Joint Committees, Works Committees, Production Committees, Safety Committees, Management Committees, Welfare Forums and Sports Councils etc. It even does not require a mention that with an intention to democratise industrial activities, firstly these were set-up by the public sector of the country and after its positive results the other sector too implemented it for its benefit. Setting up of Wage Boards|Pay Commissions at industry level by various governments, in which the workers' representatives too are given a considerable number of births, was also after the public sector took an initiative for it rather insisted in favour of it.

Curbing profiteering

Sixth in order of objectives is to enter into monopolistic industrial scene to curb anti-social practices and profiteering. Till the public sector entered the Business World the other one dominated the scene and, therefore, dictated the terms, the results of which, it is alleged, were not only the society became sufferer on the part of consuming typed, inferior, restricted and costly commodities and services but workers too adjusted a lot with their employers who were interested only in more and more profits and not for workers' betterment even for which they deserved very much. At this juncture public sector came into business as a jackal for the other one. Since it (public sector) is in 'operation business,' not only is it paying attention towards the preferences of the

consumers and the necessities of the workers, the other sector too has changed its attitude (rather became bound to change) towards the society and the workmen. Thus concluding the discussion it may be said that public sector is on the way to victory on this count too.

Ability to face challenges

Amongst other important discussions may be the one on the issue that public sector must be ready to accept the challenges in case of the private sector's failure. If a government, in true sense, is to follow the principle of welfare state, it must be ready to fulfil the needs of the society in all respect, in case the other one either proves incapable, unwilling or a failure. Perhaps the idea behind is that, this is the basic obligation of the governments to ensure smooth running of the life of the common man; it should not be left on the mercy of the private sector. Considering the gravity of this challenge public sector of the country has prepared itself very well. Today's public sector of the country is not only providing various services to the people well (in competition with the other sector) but has also prepared itself for providing consumer goods, if so required. In this respect it may be mentioned that the Indian Public Sector is sound not only on the managerial and human resource part but is also strong on the count of finances and technology. The time has proved the readiness of the public sector on this issue and it is only time which will further prove it's capability in future too.

'Business competition though may harm entrepreneurs usually benefits the consumers and the workmen', an assessment of this statement will be the last discussion to test the capability and fruitfulness of Indian public sector. Not to say that this result can only be achieved if public sector is running well and is able to give a true competition to the other sector. To speak the truth it is not difficult to comment that the public sector, because of financial constraints lack of proper and timely decisions and bureaucratic set-up, could hardly be successful on this count. Though the Public Sector is almost able to provide any type of service or commodity to the consumer, it has no control on the cost and prices of the commodities| services produced|provided. Thus the very essence of the competition remains unachieved. It is very painful to conclude that the public sector could hardly provide any relief to the consumers regarding prices, it has shown part success in helping its workmen.

The above discussion portrays that in most of the counts the public sector has achieved its targets, while in some it is on its way to do that. Amongst the notable areas in which the public sector is yet to make its entry is the finance. Economy or profit making even for its upkeep and maintenance, are the words which the public sector is yet to follow. The precedents show that the public sector has not improved its position economically which perhaps proves its failure on this count.

(Continued from page 17)

Coking Coal ranks second place (Rs. 191.15 crore) with a figure of 12.5 per cent, Eastern Coalfields accounted third position (Rs. 127.88 crore) with a percentage of 8.3, Delhi Transport Corp. has got fourth place (Rs. 101.12 crore) with a figure of 6.6 per cent, Fertilisers Corp. of India fifth place (Rs. 83.16 crore) with a percentage of 5.4, Hindustan Fertilisers Corp. got sixth place (Rs. 72.40 crore) with a figure of 4.7 per cent, Kudremukh Iron Ore Co. seventh place (Rs. 69.69 crore) with a percentage of 4.5, Heavy Engineering Corp. of India accounted eighth position (Rs. 51.90 crore) with a figure of 3.4 per cent, Shipping Corp. of India ninth place (Rs. 50.55 crore) with a percentage of 3.3, Bharat Aluminium Co. tenth place (Rs. 37.94 crore) with a figure of 2.5 per cent.

The total loss incurred by 91 enterprises during 1983-84 was Rs. 1,533.15 crore whereas the top ten loss-making enterprises showed a loss of Rs. 1,000.32 crore and percentage to total by loss making enterprises was 65.2 per cent, for remaining 81 enterprises incurred loss of Rs. 532.83 crore with a figure of 34.8 per cent.

Conclusion

From the foregoing pages we can conclude that the performance of public sector undertakings during the last two decades has been unsatisfactory. Social and economic returns have been low and in many cases huge losses have been incurred, output is far below the capacity and cost are high. Delay in construction, cost escalation in construction projects have led to over capitalisation. But the outlook for the coming decade for public sector undertaking is quite satisfactory in the sense that the growth in industrial field will be accelerated due to fresh allocation of resources in the field of power generation and distribution, transport infra-structural development and cost production and other core and basic sectors of our industrial economy. This will be further helped by a sustained effort by the management personnel of the enterprises to improve their method of working and taking appropriate economic decisions as and when they are called for. The need of the day is to take care of every unit of man machine, material and money of this sector to maximum profit extent. This step could go a long way in achieving the better results. Better working condition to the labour force of this sector is of vital importance. The labour force should be motivated in such a way that they should start feeling as their own concern as a part and parcel of their life as Japanese rightly did realise that labour is as important as profit. This could lead to maximum efficiency, productivity and production which is the dream of every economy and India is no exception to it.

Why these birth defects?

Dr. Ishwar C. Verma

The extent to which child birth defects are prevalent in our country can be judged from the fact that one malformed infant is born every 50 seconds and that 4 percent of all childern up to five years of age suffer from these defects. In this article the author has dwelt upon the causes—both genetic and environmental—of birth defects and the methods available for prenatal diagnosis of such defects. He says as birth defects cannot be eliminated as such the best way is to manage efficiently the wellbeing of the malformed child.

CHARLES DICKENS SAID that every baby born into this world is finer than the last. Unfortunately this is not true, and it represents one of the myths about birth defects. The reality is that one malformed infant is born every 50 seconds in India, which means that 6.2 lakhs malformed infants are born in India every year.

Population and hospital-based studies from different parts of India show that 2.5 per cent of new borns have a birth defect, and this figure rises to 4.0 per cent if the children are followed upto 5 years of age.

Malformations are an important cause of deaths in the newborn period, and contribute to 13 per cent of mortality at this time. This proportion will increase in the coming years when infections such as diarrhoeal disorders and tetanus are brought under control.

Birth defect is an abnormality of body structure or function present at birth and implies tha it is due to factors operative during the intra-uterine life or at delivery. It may be genetic or non-genetic. Two types of birth defects can be distinguished: major and minor. Major ones are those which require surgical treatment for functional and cosmetic reasons or which lead to handicap. While minor ones are those which are of no surgical or functional signifinance. For example, skin tags in front of the ear.

In the whole of North India, neural tube defects or spina bifida (an opening in the spine revealing the neural tissues) are the commonest birth defects. The highest frequency of neural tube defects is observed in Punjab (1 : 116 births), followed by Rajasthan (1 : 145 births) and Delhi (1 : 212 births). In Tamil Nadu it is 1 : 330 births, and in Bombay 1 : 450. The frequency is lowest in Calcutta. These figures have been derived from the data available from hospital births only.

In the rest of India musculo-skeletal defects are the most common, such as club-foot. The reasons for these geographic variations in prevalence are not known.

Their causes :

Most commonly birth defects are due to multiple causes, and result from an interaction between genetic and environmental factors (65 per cent). It is estimated that about 25 per cent of birth defects are due to genetic factors, and 10 per cent due to environmental factors.

Genetic

Human body is made up of cells, just as a house is made up of bricks. The cell can be likened to an egg, it has a nucleus (like the egg yolk), surrounded by cytoplasm (like the white of the egg). The

nucleus contains the hereditary material called D.N.A. This is distributed in the form of chromosomes which in the humans are 46 in number. These chromosomes exist in 23 pairs—one of each pair comes from the father, other from the mother. The chromosomes are rod-like structures on which are located the genes. like beads in a necklace. Genes are the units of inheritance. Three mechanisms of genetic disease are recognized.

1. **Chromosomal disorder :** Chromosome is either missing or in excess. The commonest example of a chromosomal defect is Down's syndrome, also called mongolism where there is an extra 'chromosome-21'.

2. **Gene disorder :** Each pair of genes constitute a single characteristic. Abnormality of either a pair of genes or a single gene in the pair can cause birth defects. A common example is thalassemia (congenital anaemia which requires repeated blood transfusion for survival) which is caused when both genes of a pair are abnormal. In case of a single gene abnormality we have achondroplasia which causes dwarfism.

3. **Polygenic disorders :** These are due to harmful effect of many genes interacting with the environment to cause disease For example : club-foot : cleft lip palate, and congenital dislocation of the hip.

Why genetic disorders

Although the precise causes are not known, one important factor is advanced maternal age at conception. Whereas the risk of Down's syndrome is 1 : 800 births considering all ages, the risk is 1 : 325 (almost 3X higher risk) when the maternal age at conception is 35—39 years; the risk is 1 : 67 with maternal age at conception is between 40—44 years, and 1 : 30 when the maternal age is above 45 years. At AIIMS the studies have shown that 14 per cent of cases of Down's syndrome were born to mothers aged more than 35 years at conception, as compared with 3.6 per cent in the case of normal babies. The best maternal age to have children is between 25 to 30 years.

Does advanced *paternal* age at conception raise the risk of genetic disease in the offspring? The answer is *yes*. Our own data on genetic disorders confirm that advanced paternal age also causes a higher incidence of single gene defects in the offspring.

Radiation can also damage the genetic material (i.e., DNA). Studies carried out by scientists from the AIIMS have established that the prevalence of Down's syndrome is higher in an area of Kerala (Chavara-Neendakara) which has thorium in the soil giving rise to a 10x background radiation as compared to other areas like Trivandrum or Delhi. X-rays of the pelvis in women exposes the ovaries to radiation and should be done after great thought and care, and only when absolutely necessary.

In the whole of South India (Karnataka, Kerala, Tamil Nadu and Andhra Pradesh) where Dravidian languages are spoken, the *consanguineous marriages* are preferred in almost 40 per cent of the population where first cousin and uncle-niece marriages take place. In the North, where the Aryan languages are spoken, the practice of consanguinity is almost exclusively restricted to the muslims who marry their first cousins.

Each individual carries five to six harmful genes which do not lead to any abnormality if the other gene in the pair is normal. In consanguineous marriages the parents have many genes which are similar. Therefore, the chance of inheriting an identical harmful gene from both the parents are much increased in consanguineous marriages

Analysis of the data collected from Madras, Bombay and Vellore shows an increase of 1-1|2 times in the rate of malformations among the offsprings of consanguineous marriages.

Environmental

Infections during pregnancy : Viral infections during the first trimester (12 weeks) of pregnancy can damage the fetus. The risk is highest when the infection is due to rubella (German measles). If the mother gets futella in the first trimester of pregnancy the risk of the fetue being affected is about 60 per cent. The infant gets many malformations, such as cataract, heart disease and deafness. Studies carried out at the Institute show that among women aged 15 to 34 years in Delhi, 20 per cent do not have antibodies against rubella, as contrasted with 30 per cent in rural areas around Delhi. These women with no antibodies are prone to the disease during pregnancy and may produce an abnormal child. This emphasizes the fact that rubella immunization is a priority even in India.

Studies at the Institute have shown that infection with toxoplasma agent is an important cause for spontaneous abortions. In a study among the high risk families we found that 4 per cent of newborns had infection with toxoplasma agent, acquifed transplacentally form their mother. As such babies with this infection have eye problems and mental retardation.

Drugs during pregnancy : Drugs administered doing the first trimester of pregnancy can certainly damage the unborn child. A prospective study on the use of drugs by pregnant women in Bangalore showed that on an average a women took 4.25 drug preparations apart from vitamins throughout pregnancy. The intake during the first trimester was low at 1.43 drug preparation and 2.56 drugs per woman. Additionally many Indian women take local herbal preparations and non-allopa-

thie medicines in the belief that a son will be born or an infant with fair complexion will be born. It is best to avoid all drugs during the first trimester and in case any drug is to be used apart from vitamins these should be taken only on the advice of the doctor. Even multivitamins should be taken only in the correct dose as excess vitamin A can lead to malformations in the fetus.

Mental retardation

Mental retardation occurs due to multiple causes, some of which are environmental (like lack of oxygen for the baby at the time of delivery), and some are genetic (like Mongolism which is caused by abnormality of chromosome-21). Hypothyroidism and phenylketonuria (PKU) are important treatable causes of mental retardation. The condition of hydocephalus refers to a large head due to excessive fluid in the brain, which can lead to mental retardation unless treated timely

Prenatal diagnosis

With the advent of modern methods of diagnosis, most of which are available in the AIIMS, we are able to diagnose during pregnancy whether the unborn baby is normal or abnormal. For example, in the case of spina bifida assay of a protein called alpha feto protein in the maternal blood can tell us if the baby is at risk of being abnormal. Ultrasound studies can also be carried out to visualise the fetus. This equipment is available in AIIMS and some other hospitals and it can detect many abnormalities of the fetus. However, a certain degree of expertise is required for correct interpretation. Amniocentesis is another technique which is very useful for prenatal diagnosis. This test is possible only in the second trimester of pregnancy (i.e. only after completion of 12 weeks). In the AIIMS about 300 such cases have been done. In this test a small amount of fluid surrounding the unborn child is withdrawn and tests on this fluid can detect many abnormalities, both physical and mental. For Example, presence of spina bifida can be easily confirmed by measuring alpha feto protein in the amniotic fluid Cells from the amniotic fluid can be examined to diagnose the sex of the fetus. These cells can be cultured in the test tube to study the chromosomes. This becomes necessary if the maternal age at conception is more than 37 years or if the mother has previously given birth to a child with Down's syndrome. However, for the present if the fetus is found to be abnormal no corrective treatment is possible and we have to abort the fetus in case the parents want to avoid having an affected child.

Another new technique called *chorionic villi sampling* allows prenatal diagnosis at 9-11 weeks of pregnancy. For this purpose a catheter has to be introduced in the cervix and a small amount of chorionic villi of the placenta are removed for examination. By this test, the sex of the fetus and the chromosome status can be easily determined.

Finally, another new method for prevention of spina bifida is being tried out in the Institute. Studies in the United Kingdom have shown that the administration of multivitamins one month before pregnancy and its continuation during the first two months of pregnancy would prevent the occurrence of spina bifida in the baby. It is expected that this approach would be useful in the populations in North India where the incidence of this deformity is quite high. We have started a tria on the use of vitamin for preventing spina bifida and hopefully the results will be available in a year's time.

Managing birth defects

Despite all precautions we may still have children with varying degrees of birth defects. Often the parents wrongly hold themselves responsible and blame the defect on something that they did during pregnancy or something that the mother ate during pregnancy. *Such parents need reassurence since birth* defects to a great extent are chance occurrences. Therefore, the parents of such children must be prepared to accept the situation with full understanding.

When a child with birth defects reports to the hospital it is very important to have a thorough evaluation of the child and to plan out proper management for which coordination among several departments may be necessary With modern techniques much can be done for helping or removing the handicap due to malformations. Many malformations such as cleft lip can be repaired so well as to be unrecognisable after a corrective surgery.

Recent advances in genetic techniques have proved useful in prediction of risks to the unborn child or subsequent births where the first child has had a congenit defect. At the AIIMS studies are being conducted to prevent spina bifida in high risk families.

With proper understanding and awareness a great deal can be done to prevent certain conditions of birth defects. In this direction the following tips may be of use to the parents :

1. To choose right age for having babies and to avoid pregnancy at the advanced maternal age (beyond 37 years).
2. To ensure proper maternal nutrition during pregnancy and immunization against tetanus.
3. Delivery should be conducted in a proper manner where facilities exist to revive the body in case of a difficult delivery.
4. To go in for prenatal diagnosis wherever there is a known risk factor. For this purpose ultrasound test and amniocentesis are very useful.

(Courtesy : AIIMS Public Lecture)

BOOKS

The rural scenario

Socio Economic Condition in Drought prone areas By M. V. Nadkarni. Published by Concept Publishing House. First published 1985. Pages 236. Price Rs. 150.00

A study of India's rural scenario, littered with problems of acute backwardness and poverty due to illiteracy, lop-sided arrangements of land holdings, endemic drought conditions in certain areas and absentee land-lordism along with the existence of a vast landless labour force, has always been a challenging field for socio-economic researchers.

Dr. N. V. Nadkarni, known to be a keen observer of the socio-economic panorama of the countryside, has undertaken such a challenging task of delving into the depth of problems of a number of drought-stricken villages in several southern states in his present book—Socio Economic conditions in Drought prone areas

Running into ten chapters, the two hundred and odd-page book, based on some strenuous field research and studies, has dealt at length with three basic strategies of village development—irrigation, animal husbandry and rural industry Interestingly, it has also brought forth with some facile and convincing arguments the inherent limitations of these, strategies in attaining the desired level of development through eradication of poverty.

The author's observation that a purely technocratic strategy, which concentrates only on providing modern inputs, would not go far enough even in the limited sphere of agricultural development, is perhaps a timely counsel and a caution for the country's rural administrators and also to the policy planners.

That technology alone cannot eliminate poverty and inequality without a basic change in the land system and other socio-economic infrastructure in the country-side, has been made clear by Dr Nadkarni when he makes some plain speaking that, "even in the most developed villages, the poverty that has remained, is staggering. The development processes that increase inequality have serious limitation in eliminating poverty, though they may reduce poverty to some extent".

The solution, to a major extent, obviously lies in the extension and improvement of literacy and education level, which can be instrumental in making the millions of exploited rural poor in drought affected pockets aware of their socio-economic ills This consciousness will ultimately help them identify the causes of poverty.

This point has been made absolutely clear when the author says, "the process of eradication of poverty starts not when funds are thrown on development schemes planned and implemented by officials, but when poor start making an intelligent diagnosis of their ills and make concerted efforts to overcome them. Schooling and literacy can play a very helpful role in this process, if only planned and operated in that spirit".

The book with a succinctly educative foreward by Dr. G. V. K. Rao, a former Member of the Planning Commission, has definitely added a new dimension to the efforts of the country's social scientists to understand the complicated problems of rural development.

Madhusudan Guha Roy

Passenger transport

Road Passenger Transport in India By Dr P. G Patankar. Published by Central Institute of Road Transport (Training and Research), Pune—411026 Pages 226. Price Rs 80 00.

Passenger transport has, for the most part, received lesser attention than freight transport While animal drawn carts besides walking are the predominant modes in the rural passenger scenario, the suburban rail and road based mechanised services predominate in the rest of the country, particularly urban areas Though the State entry into passenger road transport operations is several years old, there are pertinent questions about their operational viability, future, etc, in the minds of many This book dealing with the above has come not a day too soon.

The book has seven chapters, viz, National Scene, Rural Transport--State of Art; Urban Transport—State of Art; Operational Economics; Operational Productivity and Efficiency; Effective Management; and Trip into Tomorrow The author with his long years of experience is an acknowledged expert in the field No wonder he is comprehensive in his analysis. The book delineates the importance of transport in general and passenger transport in particular and brings out the problems in rural transport as one of mobility and accessibility and that of urban transport as a larger issue connected with the growth process and land use strategies. The growth of public sector road transport through State Transport Undertakings (STU) has been brought out as well as the problems in balancing the social objective of "providing efficient economic and adequate services" and the financial objective of earning a reasonable return on capitals. The analysis of operational economics of STUs indicates an interesting conclusion that though there is a gap between revenue and expenditure, if one were to consider interests and taxes and profits (if any) accrued to Governments, the return to investors was around 20% between 1973 and 1980. The chapters on Operational

Productivity and Efficiency and Effective Management touch a wide spectrum of issues leading to sound and practical recommendations which merit the attentions of the managerial heads of the STUs. The final chapter is really a trip into the future, which among other things discusses the need for better pricing strategies, fuel conservation, vehicle design et all, bringing out the central need to improve productivity of existing assets in addition to provision of new assets.

The book contains a wealth of information presented with a perspective on the role of road transport in meeting passenger transport requirements A suggestion or two may be made out of eagerness to break fresh ground and to make the work more complete : perhaps the chapter on "Rural Transport—State of Art" could bear the deletion of a general discussion on the genesis of the STUs and their financial position, etc., and include some data relating to rural transport vehicles—bullock-carts, passenger buses operating (whether in private or public sector) through inter-district services in various states. In addition, despite the difficulty in compilation of such data, one wishes that the mobility parameters, vehicle population and performance indicators of STUs given in the chapter on "Urban Transport—State of Art" are for the same set of cities. Objectively viewed, this book is a very well researched document which not only brings out the perspectives and the role of the public sector road passenger transport but also presents suitable prescriptions thereto An excellent book from an acknowledged transportation technocrat

R. C Srinivasan

Developmental economics

The Less Developed Economy—A Critique of Contemporary Theory. By Kaushik Basu. Published by Oxford University Press, Delhi Price : Rs. 90 Page 198 :

Mr. Kaushik Basu, reader in Economics at the Delhi School of Economics, has attempted to spell out the existing state of theoretical development economics with particular reference to the less developed economies in this brilliantly printed book The book is sundered into three parts and the first one deals in extenso the macroeconomic problems · stagnation, unemployment. inflation and growth Here Mr. Basu takes recourse to elucidating the title controversy over balanced versus unbalanced growth and quotes extensively from works of Nurkse, Kalecki and Lewis Mr Basu observes that if a poor country is to develop, it has to be on the basis of "a synchronised expansion in many sectors" Though this is stating the obvious, the implementation of many-sided developments in the face of overwhelming odds characteristic of less developed countries is easier said than done !

The second section is about the dual structure of less developed economy—the urban and the rural. A characteristic of dual economy is a juxtaposition of a small industrialised and an agricultural sector. In the dual economy imbalances are galore such as workers in the industrial sector earning higher wages than their counterparts in the rural sector. The author adumbrates on migration, unemployment and wage rigidities in the context of a dual economy. The end part of the tome is devoted to a disaggregated analysis of several facets of backward rural economies, in particular, the causes of technological stagnation, the consequences of different forms of land tenure and the nature of rural credit markets.

The author warns that simplistic plans which disregard the prevailing structure of incentives in employment generation may help win votes but are unlikely to assuage unemployment in the less developed economies. Mere creation of more urban jobs in an economy where farm sector has a functional role to play may not be an ideal answer to the problems of dual economies, the author asserts.

Although the blurb of the book boasts that the author's reliance on diagrams and arguments rather than on mathematics is designed to simplify issues involved, a lay reader may not be able to appreciate the concatenation the author is able to establish from varied theories of economic scholars The book would have been a solid addition and a real critique of contemporary theory if it endeavoured to draw analogies from prevailing status of the less developed economies, instead of laboriously elaborating on the theoretical models of development The high cost of the book may lend it useful only to libraries and other academic bodies though it is purported to "achieve a wide readership among professional economists as well".

G Srinivasan

Management accounting

TOPICS IN MANAGEMENT ACCOUNTING Edited by John Arnold, Bryan Carsberg and Robert Scapens. Published by Heritage Publishers New Delhi Pages 300 Price Rs 15.00.

It is claimed that the book brings together original writings by authors who are experts on the topics covered. The U K. based authors discuss the prerequisiote for a study of almost any aspect of accounting along with issues like forecasting, decision-making, cost measurement, control and so on. Also, there is an elaboration of the historical perspective of management accounting culminating in the current state of the subject.

As is well-known. management accounting has grown out of the subject known as cost accounting and both are important for decision taking in business enterprises. A key step in the development of the subject was the introduction of systems of bud-

getary control. In recent times a substantial change in the range of topics studied in management accounting has taken place in the area of methodology wherein provision of information constitutes a critical element introducing as it does a branch of economics that deals with questions related to judgements of the 'best' amount of information.

The chapter on scientific method tells us that it is applicable to any empirical phenomena which can be shown to exist or be created. And yet scientific analysis of human behaviour is a difficult problem as the subjectipe element in human rationality precludes the objective understanding of real behaviour. At the same time, it is said that new ideas have been tolerated irrespective of their pragmatic value or theological implication. "It is likely that Rutherford had no idea where splitting the atom would lead. Similarly, to be useful, accounting science should be as unfettered as resources will allow."

On the relevance of making use of new information, the authors contend that interactions between compilers and users of accounting information continues in an unending sequence of improvisation and compromise as new contexts emerge. As for the choice of a forecasting system, it should depend on the costs and benefits involved in the particular circumstances of its proposed use. No one system is preferable in all situations. When we examine the role of budgets in calculating incremental costs, the cost of using a resource should depend on the alternative uses to which it could be put. Such an interpretation of cost is consistent with the economist's concept of opportunity cost, which is normally defined in terms of the value of the best opportunity foregone by not applying a resource to an alternative use.

There are topics on linear programming, selling price decisions, stock control models, costing for planning and control, and financial planning and control which have been quite elaborately discussed and analysed. It is rightly observed that while quantitative techniques are eminently useful for structured decisions, unstructured decisions do have a quite substantial impact on the organisation and its participants. Such decisions include introduction of a new product line, development into new fields of production, or acquisition of interests in other companies Yet, a plea is made for further researches in these and other connected aspects.

Navin Chandra Joshi

Attention Readers!!!

Reserved for Readers

From November 1—15, 1986 issue of YOJANA, we will have a regular column "**Reserved for Readers**". We propose to present this column as a forum of views of our readers on current issues of public interest. We would also welcome genuine comments on the contents of the journal, not exceeding 200 words, by ORDINARY POST addressed to: Chief Editor, YOJANA, Room No. 508, Yojana Bhawan, Parliament Street, New Delhi-110001.

Scheme for production of low-priced fabrics extended to handloom sector

IT HAS BEEN DECIDED to extend the scheme for production of low-priced blended fabrics by National Textile Corporation mills, known as the *Sulabh* cloth scheme, to the handloom sector by supplying duty free polyester fibre for the production of such cloth.

This has been done with a view to encouraging the production of mixed fabrics in the handloom sector and also to increase the earnings of the handloom weavers.

The supply of yarn for the production of these fabrics by use of duty free polyester fibre will be restricted to the mills belonging to the N.T.C. or State Textile Corporation or Cooperative Spinning Mills. The overall control of the scheme will rest with the Development Commissioner for Handlooms. □

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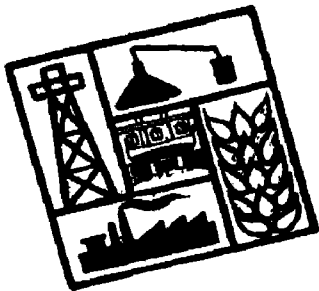
Industrial sector to attain 8 per cent growth

THE SEVENTH PLAN AIMS at an overall annual average growth rate of over 8 per cent in the industrial sector, as against the growth rate of 5 5 per cent achieved during the Sixth Plan. According to the Plan document, Indian industry will have to attain a higher level of productivity and economic viability in order to attain the Seventh Plan target. Upgradation of technologies and modernisation of industry will have to be combined with better efficiency in the use of factors of production. The resultant improvement in product quality and reduction in costs would not only stimulate domestic demand but would also enable our industrial products to compete abroad. Above all, the document hopes it would benefit the Indian consumer.

The document further says that the growth rate in the industrial sector would be supported by : (a) improving performance and efficiency of the core sector, namely, power, railways, steel and coal; and (b) enlarging purchasing power through overall economic growth and the specific poverty alleviation and employment generation programmes. The main elements of the strategy for the industrial sector would be: restructuring of industry; efficient use of capital improving infrastructural facilities; modernisation and upgradation of technology ; increased productivity; and giving thrust to exports.

The guiding principles of the Seventh Plan for achieving growth with social justice and improving productivity in the industrial sector will be : (i) to ensure adequate supply of wage goods and consumer articles of mass consumption at reasonable prices and of acceptable quality; (ii) to maximise the utilisation of the existing facilities through restructuring, improved productivity and upgradation of technology; (iii) to concentrate on development of industries with large domestic market and export potential to emerge as world leaders in them; (v) to usher in 'sunrise' industries with high growth potential and relevance to our needs; and (v) to evolve an integrated policy towards self-reliance in strategic fields and opening up of avenues for employment of skilled and trained man-power. □

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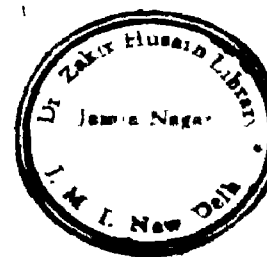
Genetic erosion of plants

NEXT ISSUE

spotlight on population

The Twenty-Point Programme-1986

ACCORDING TO A STATEMENT made by Shri A.B.A. Ghani Khan Choudhury, Union Minister of Programme Implementation, in Parliament on August 20, 1986 the war on poverty is the first priority of the Government. In the past five years, more than ten crore of our poor have been raised above the poverty line. The goal is to remove poverty and create fuller employment.

The statement says the Twenty-Point Programme is the cutting edge of the plan for the poor. Now the Programme has been restructured in the light of the achievements and experiences and the objective of the Seventh Plan. The restructured Programme renews the commitment of the Government to: eradicating poverty; raising productivity; reducing income inequalities; and removing social and economic disparities, and improving the quality of life.

The major thrusts of the new Twenty-Point Programme-1986 will be:

1. **Attack on Rural Poverty.**
2. **Strategy for Rainfed Agriculture.**
3. **Better use of Irrigation Water.**
4. **Bigger Harvests.**
5. **Enforcement of Land Reforms.**
6. **Special Programmes for Rural Labour.**
7. **Clean Drinking Water.**
8. **Health for All.**
9. **Two-child Norm.**
10. **Expansion of Education.**
11. **Justice to Scheduled Castes and Scheduled Tribes.**
12. **Equality for Women.**
13. **New Opportunities for Youth.**
14. **Housing for the People.**
15. **Improvement of Slums.**
16. **New Strategy for Forestry.**
17. **Protection of the Environment.**
18. **Concern for the Consumer.**
19. **Energy for the Villages.**
20. **A responsive Administration.** ❑

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Challenges of Poverty Removal

Dr. Biswanath Ghosh

Strict enforcement of land reforms and revamping of credit institutions can provide, according to the author, the necessary assets and resources for the poor as well as promote a more equitable social structure. Social change can also be achieved, he feels, by greater participation of the poor through the elected institutions at the grassroots level and through their own organisations. In the Seventh Plan, the author says, the Integrated Rural Development Programme should be the king pin for poverty allevation. But the cost effectiveness and minimisation of the leakages should be the guiding principles in the implementation of this programme. The author also suggests some major thrusts in the poverty alleviation strategy.

THE 'ASIAN DRAMA' IS STILL WITH US. Despite the rise in average incomes over the past two decades, the incidence of rural poverty refuses to go away. Poverty in India, whether we measure it in terms of income or nutritional levels, is concentrated among certain occupational classes in both the rural and the urban sectors Most of the rural poor are to be found among two groups : peasant cultivators with very small holdings and landless labourers. In the urban sector most of them are unemployed or underemployed people. According to the 'conventional wisdom' in development literature, as a country increas its income the benefits will trickle down to even the poorest members of society. This should happen through the creation of more jobs as the economy expands, better wages as the country earns more and higher prices for farm produce as towns grow. But all this may take time. Poverty cannot wait in an age of rising expectation.

Poverty removal

It has rightly been stated in the Seventh Plan that poverty alleviation programmes have to be viewed in the wider perspective of socio-economic transformation in the country While the present strategy of direct attack on poverty through specific poverty alleviation programmes is justified because of insufficient percolation of benefits to the poor from the overall economic growth, it should be appreciated that the stategy of direct attack on poverty cannot be sustained and would not yield the desired results if the overall growth of the economy itself is slow and the benefits of such growth are inequitably distributed. First, the resources and capabilities needed for running such programmes cannot be generated in the system unless the economy itself is buoyant and there is a sustained increase in output. Secondly, the demand for goods and services produced by the poorer household enterprises rises significantly in response to the overall increase in incomes in the country so that the viability of these household enterprises depends critically on the sustained increase in national income. Thirdly, it is necessary to ensure that the pattern of overall economic growth itself is such as to generate adequate incomes for the poorer sections through its greater impact on employment generation and on the development of the less developed regions. The programmes for poverty alleviation should thus be regarded as supplementing the basic plan for overall economic growth in terms of generating productive assets and skills as well as incomes for the poor.

Social transformation

The economic betterment of the poorer sections cannot be achieved without social transformation involving structural changes, educational development, growth in awareness and change in outlook, motivation and attitudes. The social framework should be such as to provide opportunities for the poorer sections to display initiative and to stand on their feet. Moreover, such a framework can ensure that the benefits of poverty alleviation programmes really reach the poor and are not frittered away through various leakages. Strict enforcement of land reforms and revamping of credit institutions can provide the necessary assets and resources for the poor as well as promote a more equitable social structure. Greater participation of the poor through the elected institutions at the grassroots level as well as through their own organisations is another means to achieve social change. Improvement of literacy and education and the imaginative use of various mass media for communicating useful information and knowledge as well as for changing the outlook of the people by instilling in them the egalitarian spirit, the urge for and confidence in achieving self betterment through cooperative endeavour, are essential for speeding up the process of socio-economic transformation.

Population control

The Seventh Plan reiterates the goal of bringing down the percentage of population below the poverty line to less than 10 by 1995. Therefore, the special programmes for income generation for the poor through assets endowment and wage employment for them will be continued at an accelerated pace during the Seventh Plan period.

In the Seventh Plan the Integrated Rural Development Programme (IRDP) should be the kingpin for poverty alleviation.

IRDP, its effectiveness

Cost-effectiveness of the programmes and minimisation of leakages should be the two guiding principles in the implementation of poverty alleviation programmes. Economic viability should be understood primarily in terms of cost effectiveness, i.e. maximum income generation per unit of total expenditure incurred. The ability of a poorer household to cross the poverty line depends on its overall income.

To achieve the objectives of cost-effectiveness and minimization of leakages by imparting the necessary flexibility in the choice of activities and by achieving integration in the programmes, a three-pronged strategy is envisaged in the Seventh Plan. First, poverty alleviation programmes would be formulated and implemented in a decentralised manner with the participation of people at the grassroots level through village panchayats, panchayat samities, Zilla parishads, etc. Such an approach will contribute to the selection of projects suited to local conditions and to the integration of poverty alleviation programmes with area development. This framework will also help in the timely provision of services in their appropriate sequence and in ensuring that the benefits of such programmes really reach those for whom they are intended. The Working Group on District Planning constituted by the Planning Commission had recommended a gradual approach towards decentralisation for achieving the objectives of effective implementation of poverty alleviation programmes and balanced regional development. During the Seventh Plan, decentralisation of the planning process and full public participation in development will be pursued on the lines suggested by the Working Group

Secondly, the launching of a large number of programmes has resulted in a multiplicity of organisations, leading to duplication of management efforts. The effective implementation of poverty alleviation programmes would call for better planning at the district level involving various disciplines, tighter organisational set up to ensure optimal use of resources and closer monitoring. A high-level Committee has been set up by the Planning Commission to review the existing administrative arrangements for Rural Development and Poverty Alleviation Programmes and to recommend an appropriate structural mechanism to ensure that they are planned in an integrated manner and effectively implemented.

Thirdly, keeping in view the limited absorptive capacity of the poorest households, the Approach to the Seventh Plan has also emphasised the need for taking up group-oriented activities for beneficiaries through the promotion of co-operatives, registered societies, informal groups etc., so that the economies of scale, inherent in some of these activities, are fully realised while at same time group initiative and effort of the poor are promoted. This is necessary to protect the beneficiaries from the adverse operation of market forces whether on supply of inputs or on the sale of their produce. For purposes of bringing about a greater degree of awareness among and participation of beneficiaries, a central scheme is proposed to be launched for the organisation of beneficiaries both in terms of group-oriented economic activities and increased consciousness.

Lacunae of IRDP

Many of the shortcomings of the IRDP stem from the fact that a programme of massive dimensions was launched with very little preparation. The Sixth Plan period thus can be called a period of trial in which the programme has graduaty come to be known, understood and even established. The gaps that have been revealed and the weaknesses that have been experienced in the process will be remedied in th Seventh Plan so as to make the IRDP an effective instrument of poverty alleviation.

The Programme will continue to aim at the poorest of the poor who will be identified by an annual household income of Rs. 4800, which is substantially lower than the cut-off income of around Rs. 6400 at the poverty line level. Towards achieving this end, much greater care will be exercised in the process of selection of beneficiaries. Considering the low absorptive capacity of the poorest among the poor, the adoption of the total household approach will be emphasised as a major plank of the Programme.

Productivity, how to raise it!

Due emphasis would be given to augmenting productivity through IRDP by taking up land-based activities like minor irrigation, dry farming, horticulture and even farm forestry. With the emphasis of IRDP on the poorest of the poor, this would imply largescale conjunctive activity with land reforms.

Concrete steps will be taken up to step up activity in the industries, services and business (ISB) sector. Realistic project profiles will be worked out for household enterprises and wherever possible larger group enterprises, in areas of traditional skills. These will take into account the need to provide balancing equipment and improvement of existing capital stock along with the provision of working capital to maintain continued income flows and asset development and renewal. In a number of other sectors of the economy like water supply and sanitation and improved agricultural implements, there is considerable scope for developing productive ventures for production and service of new technology-based equipments which will be exploited and developed to the maximum extent as part of secondary and tertiary sector activity under the IRDP. The absence of infrastructural support and backward and forward linkages which is a major area of weakness under the Programme will be given special attention :

Where the thrust is needed!

7. The National Rural Employment Programme will be continued in the Seventh Plan as an important component of the anti-poverty strategy. This will have to be viewed as an integral part of the total package which would imply that an effort would have to be made to direct and monitor the wage employment opportunities accruing through this Programme to members of the target group including those identified for assistance under the IRDP. The same principle would apply in the choice of projects which would have to provide reasonably long spells of employment during implementation directed towards poor, long-term income and employment generation potential, capacity to create a base for productive asset endowment and capacity for filling gaps in vital infrastructure. Based on this, priority will be accorded to works for the development of waste lands and marginal lands allotted under land reform measures, renovation of derelict tanks for large scale development of fisheries with the target-group orientation, social forestry including fuel and energy plantations, fodder and pasture development and roadside plantations with maximum involvement of the community groups in their management coupled with nursery development of target-group land-holders. Development of composite homestead projects for the shelterless in the form of housing complexes-cum-production estates would provide vital economic infrastructures like buildings for godowns, banks and workshops for target-group beneficiaries would be chosen.

2. Rural-Landless Employment Guarantee Programme (RLEGP) was introduced from August 1983 with the objective of (a) improving and expanding employment opportunities for the rural landless with a view to providing guarantee of employment to at least one member of every landless household upto 100 days in a year and (b) creating durable assets for strengthening the infrastructure so as to meet the growing requirements of the rural economy. An outlay of Rs. 500 crores to be fully financed by the Central Government was provided under this programme in the Sixth Plan. The implementation of the programme was entrusted to the States, but they were required to prepare specific projects for approval by a Central Committee. During 1983—85 the Central Committee approved 320 projects with an estimated cost of Rs. 906 59 crores. The target for employment generation in 1983-84 and 1984-85 was fixed at 360 million mandays against which 260.18 million mandays of employment was actually generated.

Mid-way during the Sixth Plan, the RLEGP was started with the dual objective of expanding employment opportunities in the rural areas and providing sharper focus on the landless labour household which constitute the hardcore of the poeple below the poverty line. Efforts would be made to implement a limited guarantee for providing 80 to 100 days employment to the landless labour households through this programme.

An outlay of Rs. 1250.81 cores has been provided for NREP in the Central Sector which will be matched equally by the States. The outlay of Rs. 1743.78 crores has been provided for RLEGP to be borne entirely by the Centre. Based on the average wage of Rs. 8.61 per day as in 1984-85 and a wage material cost ratio of 50:50, a total employment of 1445 million mandays under NREP and 1013 million mandays under RLEGP is likely to be generated during the Seventh Plan at an average rate of around 290 million mandays and 200 million man-days per annum respectively.

3. Drought-prone area programme. A rural works programme was started in 1970-71 in areas chronically affected by drought with the principal objective of organising permanent works to obviate scarcity relief and to generate adequate employ-

(Continued on page 30)

Twenty-Point Programme 1986

The following is the text of the new Twenty Point Programme as announced by the Union Minister of Programme Implementation, Shri A.B.A. Ghani Khan Choudhury in Parliament on August 20, 1986:

"THE WAR ON POVERTY is our first priority. In the past five years, more than ten crore of our poor have been raised above the poverty line. Our goal is to remove poverty and create fuller employment.

The Twenty Point Programme is the cutting edge of the plan for the poor. The programme has been restructured in the light of our achievements and experience and the objectives of the Seventh Plan. The restructured programme renews our commitment to :

— eradicating poverty
— raising productivity
— reducing income inequalities
— removing social and economic disparities, and improving the quality of life.

1. Attack on Rural Poverty

We shall :

Ensure that poverty alleviation programmes reach all the poor in every village;

Dovetail wage employment programmes with programmes for area development and human resource development and create national and community assets like school buildings, roads, tanks and fuel and fodder reserves;

Correlate the various rural development programmes to :

— improve productivity and production
— expand rural employment

Promote handlooms, handicrafts, village and small industries, and improve skills for self-employment;

Revitalise Panchayats, cooperatives and local bodies

2. Strategy for Rain-fed Agriculture

We shall :

Improve the technology for conserving moisture and ensure better management of land and water resources;

Develop and distribute appropriate and improved seeds;

Reduce vulnerability to drought through suitable changes in drought-prone area and drough-relief programmes.

3. Better use of Irrigation Water

We shall :

Develop the catchment areas and improve drainage in basins and deltas;

Improve irrigation management in command areas;

Prevent water logging, salinity and wasteful use;

Coordinate the use of surface and ground water.

4. Bigger Harvests

We shall :

Revolutionise rice production in the Eastern Region and other areas of low productivity ,

Achieve self-reliance in edible oils;

Secure greater production of pulses;

Intensify the cultivation of fruit and vegetables,

Augment facilities for modern storage, processing and marketing of agricultural produce;

Help livestock and dairy farmers to increase productivity;

Develop fish farming and sea fishing.

5. Enforcement of Land Reforms

We shall :

Complete compilation of land records;

Implement agricultural land ceilings;

Distribute surplus land to the landless.

6. Special Programmes for Rural Labour

We shall :

Enforce minimum wages for unorganised labour in agriculture and industry;

Fully implement laws abolishing bonded labour;

Involve voluntary agencies in programmes for the rehabilitation of bonded labour.

7. Clean Drinking Water

We shall :

Provide safe water for all villages;

Assist local communities to maintain the sources of such water supply in good condition;

Pay special attention to water supply for Scheduled Castes and Scheduled Tribes

8. Health for All

We shall :

Improve the quality of primary health care;

Fight leprosy, TB, malaria, goitre, blindness and other major diseases;

Provide immunisation for all infants and children;

Improve sanitation facilities in rural areas, particularly for women;

Pay special attention to programmes for the rehabilitation of the handicapped.

9. Two-child Norm

We shall :

Bring about voluntary acceptance of the two-child norm;

Promote responsible parenthood;

Reduce infant mortality;

Expand maternity and child care facilities.

10. Expansion of Education

We shall :

Universalise elementary education with special emphasis on girls' education;

Improve the content of education at all levels;

Promote non-formal education and functional literacy programmes, including promotion of skills;

Stimulate adult literacy programmes, with the participation of students and voluntary agencies;

Emphasise national integration and social and moral values and instil pride in our heritage.

11. Justice to Scheduled Castes and Schedule Tribes

We shall :

Ensure compliance with the constitutional provisions and laws for the Scheduled Castes and Scheduled Tribes;

Ensure possession of land allotted to Scheduled Castes and Scheduled Tribes;

Revitalise the land allotment programme;

Organise and assist special coaching programmes to improve educational standards;

Eradicate scavenging and undertake special programmes for the rehabilitation of Safai Karamcharis;

Provide better direction and adequate funds for the special component programmes;

Pursue programmes for the fuller integration of Scheduled Castes and Tribes with the rest of society;

Ensure the rehabilitation of tribals displaced from their habitat.

12. Equality for Women

We shall :

Raise the status of women;

Enhance awareness of the problems of women;

Create mass consciousness about women's rights;

Implement a national programme of training and employment for women;

Enable women to participate with equality in socio-economic development and nation-building;

Rouse public opinion against dowry and ensure effective implementation of anti-dowry legislation.

13. New opportunities for Youth

We shall :

Enlarge opportunities for youth in sports, adventure and cultural activities;

Promote physical fitness;

Involve youth on a massive scale in projects of national development such as :

- — the cleaning of the Ganga;
- — the conseravtion and enrichment of the environment;
- — mass education.

Identify outstanding young persons in all fields to encourage and develop their talents;

Involve youth in promoting national integration, cultural values, secularism and the scientific temper;

Expand the network of Nehru Yuvak kendras;

Strengthen the National Service Scheme and the National Cadet Corps;

Encourage voluntary agencies working for the welfare of rural youth.

14. Housing for the People

We shall :

Make available house sites to the rural poor:

Expand programmes of house construction;

Lay special emphasis on construction of houses for Scheduled Castes and Scheduled Tribes;

Develop low cost building materials

15. Improvement of Slums

We shall ;

Restrict the growth of slums;

Provide basic facilities in existing slum areas,

Encourage planned house building in urban areas.

16. New Strategy for Forestry

We shall :

Grow more trees and raise more forest, with the full involvement of the people;

Protect the traditional rights of tribal populations and local communities of access to limewood and forest produce;

Reclaim wastelands for productive use;

Plant appropriate vegetation in hill, desert and coastal areas.

17. Protection of the Environment

We shall :

Enhance public awareness of the dangers of environmental degradation;

Mobilise popular support for environmental protection;

Promote recognition that enduring development demands preservation of the ecology;

Ensure judicious site selection for projects and proper choice of technology.

18. Concern for the Consumer

We shall :

Bring essential consumption goods within easy reach of the poor;

Build a consumer protection movement,

Restructure the distribution system so that subsidies reach the most needy;

Strengthen the Public Distribution System.

19. Energy for the Villages

We shall :

Expand the supply of electricity for productive use in the villages;

Develop alternative sources of energy, particularly bio-gas;

Promote integrated area specific programmes for rural energy.

20. A responsive Administration

We shall :

Simplify procedures;

Delegate authority;

Enforce accountability;

Evolve monitoring systems from block to national level;

Attend promptly and sympathetically to public grievances."□

Twenty-Point Programme 1982

Given below in brief is the revised 20-Point Programme as announced by the late Prime Minister, Mrs. Indira Gandhi's Government on January 14, 1982.

1. Increase irrigation potential, develop and disseminate technologies and inputs for dry land agriculture.
2. Make special efforts to increase production of pulses and vegetable oilseeds.
3. Strengthen and expand coverage of integrated rural development and national rural employment programmes.
4. Implement agricultural land ceilings, distributed surplus land and complete compilation of land records by removing all administrative and legal obstacles.
5. Review and effectively enforce minimum wages for agricultural labour.
6. Rehabilitate bonded labour.
7. Accelerate programmes for the development of scheduled castes and tribes.
8. Supply drinking water to all problem villages
9. Allot house sites to rural families who are without them and expand programmes for construction assistance to them.
10. Improve the environment of slums, implement programmes of house building for economically weaker sections, and take measures to arrest unwarranted increase in land prices.
11. Maximise power generation, improve the functioning of electricity authorities and electrify all villages.
12. Pursue vigorously programmes of afforestation, social and farm forestry and the development of bio-gas and other alternative energy sources
13. Promote family planning on a voluntary basis as a people's movement.
14. Substantially augment universal primary health care facilities and control of leprosy, TB and blindness.
15. Accelerate programmes of welfare for women and children and nutrition programmes for pregnant women, nursing mothers and children, specially in tribal, hill and backward areas.
16. Spread universal elementary education for the age-group 6-14 with special emphasis on girls, and simultaneously involve students and voluntary agencies in programmes for the removal of adult illiteracy.
17. Expend the public distribution system through more fair price shops, including mobile shops in far-flung areas and shop to cater to industrial workers, students' hostels, and make available to students text-books and exercise books on a priority basis and to promote a strong consumer protection movement.
18. Liberalise investment procedures and streamline industrial policies to ensure timely completion of projects. Give handicrafts, handlooms, small and village industries all facilities to grow and to update their technology.
19. Continue strict action against smugglers, hoarders, and tax evaders and check black money.
20. Improve the working of the public enterprises by increasing efficiency, capacity utilisation and the generation of internal resources. ☐

Planning for a sound housing

Dinesh Chand

A serious threat to physical and mental health of the population and their social well-being has been felt by most countries because of the over-crowded housing and the resultant unhealthy environment. The author feels over half of the diseases of the metropolitan areas could be eliminated through proper understanding of the factors effecting health of community and sound environmental planning of housing. In this article he highlights housing environics, planning in accordance with the minimum standards and role of various groups of interest, education media and public health engineers.

HOUSING IS A BASIC and indispensible need of the human beings. The country at present is facing a colossal housing shortage. The estimated housing shortage of about 21.3 million dwelling units have been assessed by the National Buildings Organisation on the basis of 1981 census data in urban and rural sectors. For gradual eradication of a country's housing problem, the United Nations recommended the construction of atleast 10 new houses per 1000 population annually. Against this, our annual rate works out to be less than one unit per 1000 population. Now almost all possible efforts and financial assistance are being provided by our Government for promotion of housing programmes. Our planners ignore to incorporate the environmental factors in their housing programmes. Fortunately, it is now being increasingly realised that adequate housing as well as healthy and hygienic environment are not only the pre-requisities for a balanced and harmonious growth of economy but they also increase the productivity of people, raise their morale and standard of living.

The first report of the WHO Expert Committee on the Public Health Aspects of Housing has defined housing as, "The physical structure that man uses for shelter and the environs of that structure including all necessary services, facilities, equipment and devices needed or desired for the physical and mental health and social well-being of the family and individual." This report further points out that the immediate surroundings of residential buildings should be included in housing environment. Thus the residential environment, as it may more explicitly be termed, should be considered not as an isolated subject of study but as one of the several environmental health problems associated with planning and development, and having economic and social aspects.

What over-crowded housing does

The present study will indicate the high incidence of major crimes, delinquency, and fires and the high costs of services of slum areas. Data have been gathered elsewhere which indicate that over half the diseases of the metropolitan areas are found within the so-called 'Slum districts' of the cities. The incidence of tuberculosis bears a close relationship to the degree of crowding in dwellings. The other diseases like pneumonia, influenza, rickets, plague, typhus, tularaemia, trichinosis, rat-bite fever, infectious jaundice and home accidents are far more prevalent in these areas of poverty and congestion, unhealthy housing.

In view of above Indian environmental engineers and planners can play not only a major role but can also take a lead in the field of housing activities through their considerable knowledge and understand-

ing of environmental problems affecting community health. In collaboration with public work departments, the planning departments and city and regional authorities, they may practically influence the decisions and approval of plans relating to water supply, sewerage and drainage systems, overcoming runoff and flooding hazards of surface water, etc. These services are so important for protection of public health that uptodate and complete information about them is essential for the operation and activities of public health engineering departments.

We need planning and regulations

About 45 years ago, C.E.A. Winslow, with his commentary on Hygiene of Housing of the American Public Health Association (APHA), established the basic principles of healthy housing. These have covered four major areas of concern : (1) the fundamental physiological needs, (2) the Psychological needs, (3) protection against contagion and (4) protection against accidents. In its first report, the WHO Expert Committee has outlined the similar principles covering four levels of planning : (1) the prevention of premature death, (2) the prevention of disease, illness and injury, (3) the attainment of efficiency of living, and (4) the provision of comfort.

The planning of healthful housing should include following major aspects :

(1) Provision of space for light air and recreation;

(2) Provision of adequate water supply and proper sewerage, drainage and solid waste disposal facilities;

(3) Freedom from accident hazard;

(4) Clean air;

(5) Freedom from unnecessary noise and disturbances;

(6) Insect, rodent and nuisance control; and

(7) A land use plan.

Presently, in some areas of development there has been a tendency to place many dwellings on small plots of ground, without any provision for children's play space nor sufficient room for adequate natural lighting, proper air circulation between dwellings and, more important, protection from fire hazards.

Every community needs space for small parks, play grounds etc., for children to play, for adult recreation, for mental stimulation and relaxation, and for other community activities which aid the total health of individual and the family.

Potable water, must

It has long been recognized that an adequate, safe potable public water supply is essential for public health and thus needs careful planning and designing. Generally, the lack of adequate quantity of water at various peak demand periods is one of the difficulties in a number of the big metropolitan areas. The lack of adequate water pressure in the municipal distribution system can cause inconvenience as well as serious health hazards due to contamination in the system by back-siphonage.

Every effort should be made in all metropolitan cities to develop a water carried sewerage system, with a provision for suitable treatment. Moreover the dangers of contamination of surface and ground water sources is frequent in the case of septic tank system. The domestic solid wastes disposal is also an important factor in metropolitan cities due to a rodent problem, fly and mosquito breeding, and other nuisance. Too often surface drainage problems are overlooked expecting the original drainage channel to perform this function.

Remove hazards

The planners should endeavour to see that for dwellings, especially those on highways and streets, such patterns are designed as minimise accidental injury or death. The programmes of overcoming existing hazards in substandard dwellings should be prepared by them because structural deficiencies are found in many of our older as well as newer dwellings. Consideration should also be given to the removal of accident hazards for children in residential streets.

and nuisance

New habitat should be located possibly in the far off places to protect people from industrial odours, gases, dust, and fumes. Existing air pollution problems should be tackled with the help of state pollution control boards or by shifting either industries or habitants, whatever is easy and economical in such cases.

Industrial noises particularly those from railroads, motor traffic and other sources which disturb comfort are all potential health hazards. For new housing programmes these aspects should be considered and corrective measures taken such as altering timing of various industrial operations in areas where disturbance is of serious character. Necessary steps for control of insects and rodent should also be taken to minimize the nuisance.

For a best housing environment, the environmental engineers|planners should cooperate in developing master plan or land-use plan for the entire area, stipulating future land-use for various public purposes. After housing plans have been completed by a development authority, it is essential that regulations and zoning methods are adopted which assure implementation of the recommendations for land use, thoroughfare, and community-facilities. Its enforcement can assure proper protection of housing areas from the factors detrimental to the community which may vitiate the utility of an area for housing purposes. In

notifying industrial areas, the planners should observe the additional regulations and consult other concerned government authorities.

Minimum standard should be adopted based upon principles of hazard-free housing as indicated in the WHO Expert Committees Report on Public Health Aspects of Housing. In the Soviet Union the mass housing programmes are carried out in accordance with All-Union Building Standards and Regulations which are revised periodically. All-Union Building and Hygienic Standards of the Soviet Union provide that the total noise levels of dwelling houses and public buildings should not exceed 35 decibles in the day time (8 A.M. to 10 P.M.) and 30 decibles at (10 P.M. to 8 A.M.). In all such cases the special abilities, experience and training of the environmental engineer can play an important role in the development of new codes, ordinances and enforcement procedures. It would be of great advantage if a clearing house could be established whereby a more effective enforcement could be assured.

Further, code enforcement can prevent the deterioration of housing facilities because of unapproved and substandard remodelling of dwelling units. Care must be taken, however, that all the principles of proper housing are fulfilled in such remodelling operations.

Appraisal

The appraisal of existing housing facilities and the need for improvement, can well be accomplished through the concentrated efforts of various governmental agencies under the leadership of well qualified and experienced environmental engineers. Census data are an important tool and key to understand the metropolitan housing problems. For an allout attack on the blight and the spread of deterioration of existing housing, a thorough analysis of entire community and its neighbourhood must be made. The US Housing and Home Finance Agency has recommended a following four steps for developing a programme for an attack on the blight:

1. Delineate the residential areas of the community by neighourhoods for study and planning purposes.
2. Determine the location, extent and intensity of blight in each neighbourhood.
3 Analyse each neighbourhood in terms of its condition and need for treatment.
4. Make recommendations for action-programme required to meet neighbourhood needs, such as code enforcement, public improvements, conservation, reconditioning, clearance and re-development.

It is essential that neighbourhoods be analysed as a whole and the condition of housing in terms of the general environment be considered. Also the pattern of land-use, traffic-flow, street arrangement and neighbourhood facilities and services may also be considered. Further, the APHA housing appraisal methods and techniques and the modified appraisal methods of the city of Detroit may also be consulted for valuable guidance. Such a study and analysis of data will sometimes indicate the need for complete removal of substandard housing in situations where corrective measures are found inefficacious. This practice may provide an opportunity to appraise the value of housing facilities of a community and to determine on a long-term basis the total liability in terms of substandard or dilapidated housing conditions.

Corrective Steps

Appraisal of existing housing conditions is followed by suitable long-term planning for solution. In most communities, following four basic types of housing area are found:

(1) Areas which are essentially satisfactory and will require protective action only.

(2) Areas which show incipient blight or which are subject to adverse effects from conditions beyond their borders. These areas will require protective and corrective action.

(3) Substandard areas which are basically sound enough to be brought upto an acceptable standard by a comprehensive approach to their problems.

(4) Areas which are unsuitable for continued use and cannot be elevated to an acceptable standard economically because of poor quality of dwellings and environmental conditions. These areas will require redevelopment.

Programmes of improvement involve following three types of approach:

(1) Conservation : It requires retaining and protecting all satisfactory elements of the dwellings and their environments.

(2) Rehabilitation : It requires repairing, remodelling, renovating or supplementing basically sound dwellings and their environment.

(3) Redevelopment : It requires demolition of individual or groups of structures and planned reuse of individual premises.

Education and publicity

The key persons in each neighbourhood of community should be approached and their enthusiasm and interest aroused for correction of existing hazards. Civic organisations, groups of parents and citizens, clubs, etc. should be educated and exposed to the problems existing in the community. Simultaneously,

the planners should be in close contact with the government bodies which are responsible for provision of public facilities. Another group of interest is of those who have a strong economic interest in such development, for example, businessmen, builders, real estate interests, mortgage houses, banks, etc. In the Ditriot Metropolitan Area, the Governor's office formed a so-called 'task force' composed of representatives of all interested groups. This task force, with officials from the various organisations have worked together and found most successful in its mission under the leadership of Chief Engineer of Environmental Health Division of the Health Department.

The application of health education techniques of housing can play an important role in the same manner as in the field of communicable disease control. For thorough understanding of problems of the people within an area, the sociologist and the educator may play an important role.

Mass education

The Mass education activity should include the production of numerous simply-worded, well-illustrated pamphlets, brochures and bulletins related to problems of rubbish disposal, rodent control, building maintenance, gardening, improvement of yards, open spaces, etc. which can encourage an individual for improving his home and its surroundings. The publicity must be coupled with demonstartion of ideal dwelling units and providing information relating to the efforts which can easily be made by themselves and financial aspects of improvements. Enthusiasm for community improvement may be developed through area-wide publicity, institution of awards, public recognition of individual efforts and inclusion of environmental studies in the schools syllabi.

There is an ever-increasing concern on the part of public health authorities about the need for rapid and effective action to stem the spread of blight which is constantly extending into neighbourhood particularly in metropolitan areas. The numourous examples can be noticed indicaing the direct interaction between sub-standard housing and communicable disease, mental health, chronic disease etc. Great rewards can be realised from improved housing programmes stated herein, through improved health, economic status and dignity of large number of the people of the country. □

Speed Post Services introduced

Speed Post Services have been started in the country from Augus 1, this year. This will help meet the increased expectations of the customers about speedier delivery of their documents and goods in keeping with the exigencies of trade and commerce. The Speed Service will be introduced in both spheres - Inland as well International. The Inland Speed Post Services will be introduced at New Delhi, Bombay, Calcutta, Madras, Ahmedabad, Hyderabad and Bangalore; while the International Speed Post Services will be available only at Bombay, Calcutta, Delhi and Madras. To begin with, the new service will be available for the United Kingdom, Federal Republic of Germany and Hong Kong. However, the services to United States and Japan are expected to be introduced shortly.

Any postal article that can be sent on registered post - letters, packets, parcels - can be sent as speed post items. For this service in addition to the normal charge, a speed post fee will have to be paid. But in the International Speed Post only a "Documents Service" is being introduced initially. Items booked on anyday would be delivered the very next working day (i.e., generally within 24 hours) by the Inland Post whereas the International Post would deliver the booked items generally within 48 to 72 hours in the major cities of the target countries.

In the event of non-delivery or delay in delivery of a speed post item, the fee charged for the service would be refunded to the sender. □

Non-oil exports go up in 1985-86

India's non-oil exports during the financial year 1985-86 amounted to Rs. 10,285.22 crore as against exports worth Rs. 9,734.21 crore in 1984-85. This amounts to an increase of 5.7 per cent. The gross figures for exports for 1984-85 had included export of crude oil worth Rs. 1563.17 crores whereas in 1985-86 crude oil worth only Rs. 135.15 crore could be exported. This was because crude oil exports have virtually stopped due to the development of domestic oil refining capacity.

The principal commodities falling under non-oil exports are : chemicals, leather and leather manufactures. iron ore, gems and jewellery, readymade garments, coffee, rice, cashew-nuts, oil cakes and shellac. An export target of Rs. 12,203 crore has been fixed for the current financial year.

This growing shortage of housing !

—Francis Cherunilam

Housing is considered usually a major goal of family saving efforts. It is also recognised as a profitable investment. According to the author, the planned housing "can increase national productability, economise on urban space and minimise the cost of urban infrastructure." It also makes significant contribution to national income. The author feels that the rate of housing stock has been lagging behind the rate of growth of households thus resulting in increased housing shortage. He fears that this shortage which was 24.7 million in 1985 may go up to 28 million by 1990.

THE UNITED NATIONS HAS DECLARED 1987 as the International Year of Shelter for the Homeless. Acute shortage of shelter, particularly in the developing countries, is indeed the most conspicuous facet of housing. However, housing has much wider significance than providing one of the basic necessities. As the World Bank Sector Policy Paper on Housing observes, "housing is important to development in both economic and welfare terms. It typically constitutes 15 per cent to 20 per cent of household expenditure. For all but the wealthy it is usually the major goal of family saving efforts. Investment in housing represents upto 20 per cent to 30 per cent of fixed capital formation in countries with vigorous housing programs, and it is increasingly recognised as a profitable investment item, yielding a flow of income. For some of the self-employed, housing is also the place of work. In countries with substantial underutilised labour, material and financial resources, housing can make use of such resources at low cost. The import content of housing construction is usually relatively low, so that multiplier linkages tend to be substantial". Further, well planned housing "can increase national productivity, economise on urban space and minimise the cost of urban infrastructure. Improved location of dwellings in relation to jobs leads to reductions in traffic congestion and increased household take-home pay by reducing commuting expenses".

Housing—its objectives

The Planning Commission observed in the First Five Year Plan : "In fulfilling the basic needs of the population, housing ranks next only to food and clothing in importance. A certain minimum standard of housing is essential for healthy and civilised existence. The development of housing, therefore, must enjoy high priority in a poor society such as ours where housing amenities are far below the minimum standards that have been internationally accepted. Housing activity serves to fulfil many of the fundamental objectives of the Plan : providing shelter, raising the quality of life particularly of the poor sections of the population; creating conditions which are conducive to the achievement of crucial objectives in terms of health, sanitation and education; creating substantial additional employment and dispersed economic activity; improving urban-rural and interpersonal equity through the narrowing down of differences in standards of living and last but not least, generating additional voluntary savings".

Housing and national income

Housing makes significant contribution to national income. The contribution of housing to gross domestic product (GDP) at factor cost increased from Rs. 1357 crores in 1970-71 to Rs. 3562 crores in 1980-81 at current prices.

Although large majority of the population and dwelling units are in the rural areas, since the mid 1970s urban housing has been making a larger contribution than rural housing to the national income. This is due to the fact many urban houses are much better and costlier compared to rural houses in general. Further, the urban sector has been the major beneficiary of the public sector housing programme.

Data available for a number of years show that income from housing account for around 3.5 per cent of the GDP of India. However, the contribution of housing to States' GPD varies widely between States. It is comparatively high in States like Tamil Nadu, West Bengal and Uttar Pradesh but very low in States like Orissa, Assam and Manipur.

Another important aspect of housing is its share in the capital formation. Gross capital formation in housing (i.e., residential buildings only) at current prices was of the order of Rs. 962 crores in 1970-71, Rs. 2599 crores in 1977-78 and Rs. 3034 crores in 1978-79. These amounted to 13.4 per cent, 14.4 per cent and 12.8 per cent of the gross domestic capital formation in these years.

In 1980-81, construction accounted for over 40 per cent of the gross domestic capital formation. In some of the previous years this ratio was more than 50 per cent.

Housing property forms an important share of the total property of the households in India, in general. According to the study of 'Household Income and its Disposition' made by the National Council of Applied Economic Research, in 1975, housing property accounts for about 28 per cent of the total wealth of the households. In this respect significant variation between the urban households and rural households is noticed. While in respect of urban households this share is about 64 per cent it is less than 24 per cent in respect of rural households. Another important factor to be noted is that in the urban sector the share of household property in the total wealth of the household is comparatively higher for lower income groups and lower for higher income groups.

Helps generate employment

One of the important contributions of housing is the generation of employment. This is of particular importance to a country like India where unemployment is a very serious problem.

The number of workers in building construction increased from 1.15 million in 1961 to over 1.26 million in 1971 and to over 2.03 million in 1981. In 1981, workers in building construction formed 64.4 per cent of the total workers in construction activities and 1.14 per cent of the total workers of the country.

Housing however is a capital intensive industry. At 1977-78 wage rates, one crore rupees investment in housing (pucca) was estimated to generate a total of 923 man years of direct employment.

Besides residential houses in India serve a variety of purposes. In 1981, only about 70 per cent of the Census houses were used exclusively for residential purpose. Nearly two per cent of the houses were used as workshop-cum-residence including household industry. Little less than one per cent of the houses were used as shop-cum-residence; 2.43 per cent of the houses were used as shops excluding eating houses; 1.51 per cent as factories, workshops and work sheds 0.39 per cent as restaurants, sweetmeat shop and eating places; 0.78 per cent as places of entertainment; one per cent as places of workshop and 0.47 per cent as business houses and offices.

In rural area, well over 90 per cent of the households reside in own houses while in urban areas more than half of the households live in rented houses.

The useable housing stock in India is estimated to have increased from 68.3 million dwelling units in 1961 to 101.5 million units in 1981 and to 106.2 million in 1983.

Table 1

Growth of Useable Housing Stock

(in millions)

Year	Rural	Urban	Total
1961	57.1	11.2	68.3
1971	66 4	16 1	82.5
1981	77.4	24.1	101.5
1983	81.0	25.2	106.2

Source: NBO, *Handbook of Housing Statistics*, 1982-83.

Unserviceable structures

There is, however, a large stock of unserviceable houses in India which is excluded from the estimate of the useable housing stock. In 1971, there were about 10.4 million unserviceable dwelling units (8 million in rural areas and 2.4 million in urban areas) compared to the stock of useable dwelling units of 82.5 million. In other words, of the total stock of 92.9 million dwelling units only 88.8 per cent were useable and the remaining were unuseable. However, in 1981, there was estimated to be a stock of about 12.9 million unuseable dwelling units. Thus, only about 88.7 per cent of the total housing stock was in useable condition. However, it should not be assumed that these unserviceable structures which are regarded as unuseable are altogether abandoned. They provide 'shelter' to many who have no better alternative.

(Continued on page 31)

Houses for the millions! the Soviet way

Subhash J. Rele

Whereas most developed countries have neglected housing in their development plans, in the Soviet Union housing is a social necessity which has been raised to the status of a constitutional right. In this article the author gives first-hand information about the gigantic efforts being made in the Soviet Union to provide this basic amenity to its millions of people. Besides the lowest possible rents the author is fascinated by the "dwelling in the park" concept of the Soviet housing policy.

WHAT IMPRESSED ME most on my recent tour of the Soviet Union was the scale and pace of housing construction activity. Based on wrong and propagandist reports I had nursed several misgivings about housing in that country. My visit and subsequent study cleared many doubts. In Moscow, Leningrad, Kiev and several other places I saw gigantic cranes dotting the skylines with men and women excavating and busy in building townships. I was myself surprised to know that the Soviet Union builds more flats yearly than such European countries as Great Britain, France, West Germany, Sweden, Finland, Norway, Italy and Austria. Whereas most developed countries have neglected housing in their development plans, in the Soviet Union housing is a social necessity. It is not a marketable commodity as, say for example, in India, often sold at blackmarket prices. Houses are for people to live in and not to make money. The bulk of the expenses in supplying the population with housing is borne by the state, it organises and finances almost 80 per cent of the housing programme.

The housing programme is a major element of the Soviet State's social policy. The Constitution of the USSR was one of the first in the world to declare it as citizen's right. This right, says Article 44 of the Fundamental Law of the USSR, is ensured by the development and upkeep of State and socially owned housing, by assistance for cooperative and individual house building; by fair distribution under public control, of the housing that becomes available through fulfilment of the programme of building well-appointed dwellings, and by low rents and low charges for utility services.

Housing construction is developed on a genuinely scientific basis with no hanky panky business. According to the latest estimate the Soviet Union requires atleast 50 million flats to satisfy the requirements of housing for its people. About 10 million flats are to be built during the 11th Plan. How is this possible? Every year 2 to 2.2 million flats are constructed. I was told that such rapid construction of an enormous number of flats is possible because the housing programme has a dependable materials and technical base; the building industry comprises 500 plants. The housing construction is organised on the principle of an assembly line; the pre-fab elements of dwelling houses and the accessories and equipment manufactured at the housebuilding and related enterprises are delivered by special transport means to the construction and are assembled as a rule, right from the "wheels". The Soviet Union was the first country to master the pre-fab technology and is the world's leader in the sphere of large element pre-fab housing construction. It accounts for 50 per cent of the housing which is built in the world with the use of this method. Engineers were enthusiastic when they told me that pre-fab technology cuts costs, improves the standard of work and doubles the speed of construction.

Lowest rent

All over the world the costs of construction have gone up considerably. So have the rents. But not in Soviet Union. It has the lowest housing rent in the world. That is one indication of the State's concern for the people's welfare. Rent is no burden for the family budget. It amounts to only 5 per cent of a family's monthly earning. For the use of unlimited quantities of water, both hot and cold, a family pays a little over one rouble per month; there are no water merets Electricity is available at the rate of 4 kopecks per kwh (about 40 paise); domestic gas 16 kopecks (Rs. 1.60 paise) per person per month. In the Soviet Union in the past two decades the cost of construction per sq. metre of housing space has gone up from 108 roubles to 170 roubles (about Rs. 1,080 to Rs. 1,700) but the rent is charged at the basic rate of 13.2 kopecks (about Rs. 1.32 paise) sq. metre per month. The basic rent rate for flats with all modern conveniences is 16.5 kopecks (Rs. 1.65 paise).

Cooperative housing

Not that there are no flats on cooperative basis in the USSR, but they are on a limited scale. Under the scheme, the State makes available to the cooperative society the land site free of cost as also 60 per cent of the funds to be paid back to the State in monthly instalments in 15 to 20 years. High building cooperatives are voluntary associations of citizens, set up to build residential accommodation at the expense of their members and with the aid of state credit. These blocks are constructed by state building organisations at the same cost as in state housing construction. The practice of financing the housing programme has undergone drastic changes in the recent past. Credit to individual and cooperative builders are now granted on new terms : the amount of the loan has been increased to 70-80 per cent and its repayment period from 15 to 25 years. The only thing that remained uncharged was the interest rate 0.5 per cent. By these additional benefits the State is stimulating the participation of citizens in the solution of the housing problem.

The USSR has a long-term housing goal. The maintenance of the high rate of building construction in the coming five years means that several millions of Soviet families will receive new, even more comfortable flats. Housing has been constantly made better. The growing construction activity has been accompanied by a rise in quality and greater convenience. Modern amenities are provided by the builders. Flats are designed with an eye to each member having his own room. The high level of creature comforts is combined with the high quality of the environment with maximum comfort outside the blocks of flats. The entrance hall has a built-in cupboard, the kitchen has a cooker, usually a gas-stove, with several rings, and there is also a sink with hot and cold water. The norms of building work provide for exhaust ventilation for kitchen, bathrooms and toilets. The flat is heated by metal radiators or built in heating panels.

"Buildings bloom, not mushroom", said a builder while taking me round a new residential site. The new residential districts that are coming up are well-planned and are integrated with children's parks, gardens and forest areas. I discovered that the Soviets do not believe in disturbing natural terrain, build roads at a low level and line them with trees, flowers, grass, minimum use of street lights, building of residential flats away from the roads at a higher level. Engineers and builders whom I met expressed confidence that in the near future every Soviet family will have a modern flat. The day is not far off when the housing problem will be fully solved.

I was intrigued by the new concept of a "dwelling in the park". A lady technician explained this to me graphically saying that the Soviets want their dwelling as close as possible to the natural environment. They are anxious to place the dwellings in the park and not to plant the park near the dwelling. Thus many new towns are virtually lost in verdueve. New models of residential buildings are now being tested on experimental sites. They are more consistent in observing the principle of functional zones in premises and better engineering and communal services.

Soviet cooperation

Can we learn something from the Soviet experience ? In the past 50 years Soviet scientists and construction workers have accumulated much varied experience in building, which they are sharing with many countries. They are helping them to develop and industrialise housing construction. Over a year ago, a group of Soviet specialists visited India. On their return, a detailed programme for cooperation in building one—and two—storeyed houses was drawn, taking into consideration the experience of house-planning in various regions of both countries. We have had successful and fruitful cooperation agreements with the Soviet Union in various economic and other vital fields. Why should we be chary of entering into cooperation agreement in housing construction ? Not many doubt that, we as a nation, will stand to benefit immediately from such a cooperative endeavour. If "vested interests" and racketeers are putting obstacles in the way the Government should deal firmly with them. The strength of the Government lies in firm action and not in tall slogans like "houses for the millions". The Soviet Union has shown the way as to how houses for the milions can be built without mouthing slogans. We can emulate the Soviet example. □

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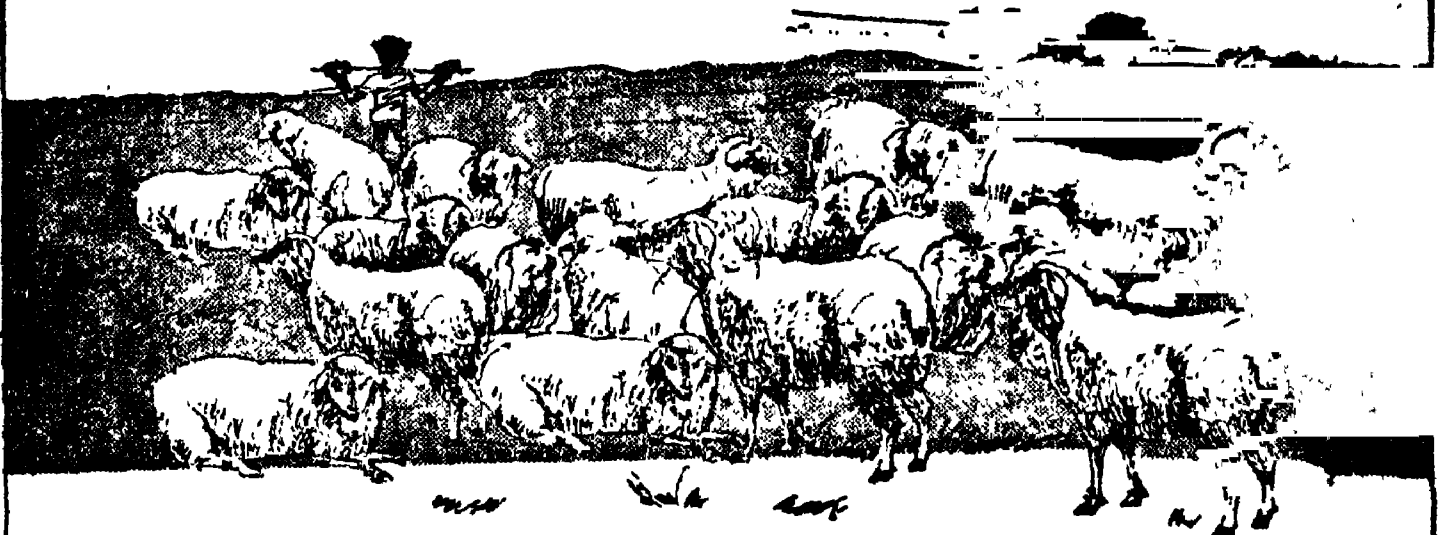
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Further information is available on request

Stop this loss of plant genes!

Bharat Dogra

Now when the euphoria over the "Green Revolution" seems to be ebbing, many farmers have found to their horror that they cannot revert to the traditional varieties for their seeds are no more available. This, the author says, is due to our unplanned craze for the High-Yielding Varieties that has resulted in the loss of invaluable plant genes. He does not find the establishment of "gene banks" adequate enough to check the dangers posed by this genetic erosion to the flora, especially in the third world countries like India. The author cautions it is high time the Government acted to check this erosion of germ plasm, and the genetic material made accessible to the farmers whenever required by them.

SOME REPORTS FROM INDIA and other countries suggest that several farmers after growing widely publicised "Green Revolution" High Yielding Varieties (HYVs, whose most important property was to tolerate heavier fertilising, and as a result of this, it was claimed they give higher yield of grain) now find them unfavourable due to a number of reasons and want to revert back to their traditional varieties. But in this they face a number of problems, the most exasperating of which is that the seeds of many favoured traditional varieties are just not available. In the initial high expectations regarding the "Green Revolution HYVs", vast acerages were planted to these new varieties and at that time farmers did not realise the importance of continuing to grow some of the traditional varieties or preserving their seeds.

A loss too serious

This aspect of genetic erosion of plants at least comes into notice, but with the destruction of forests —due to large-scale commercial felling operations, construction of dams or other projects and numerous other reasons—several varieties of plants which give us fruit, fodder, grain, medicine, fibre, etc., are lost for all time without, in many cases, anyone becoming even aware of this.

This genetic erosion of plant wealth is extremely tragic, for the varieties which vanish, knowingly and unknowingly, could have provided the much-needed germ plasm to plant-breeders for improving the yield of crops, or increasing their pest and disease resistance, or adding to the flavour or other qualities of some foods. While some genetic erosion has probably always taken place, in recent decades it has taken place on an unprecedented scale on account mainly of the very rapid pace of deforestation and the large-scale spread of green revolution HYVs, often of a narrow genetic base.

"Gene Banks" inadequate

Recognition of this danger of gene erosion has prompted worldwide efforts for collection of germ plasm and its storage in 'Gene Banks'. The Rome-based International Board for Plant Genetic Resources (IBPGR) attempts to co-ordinate the regional work in this field undertaken by eight international crop research stations. There are over sixty nationally controlled "Gene Banks" whose work the IBPGR considers. The IBPGR, the stations and the banks are supported by the United States based National Seed Storage Laboratory (NSSL) which "maintains" material as a base collection for the United States

and for the global network of genetic resource centres. Compared to the NSSL is the Vavilov Gene Bank in the Soviet Union. In India the National Bureau of Plant Genetic Resources has been established to take care of this important task. The Seventh Plan document states that the Botanical Survey of India will organise at least four Seed Banks of Non-Agricultural Economic Plants as also Tissue Banks of endangered|threatened species of plants. Yet, on the whole, the efforts to protect genetic erosion through the setting up of "Gene Banks" is considered inadequate, specially in third world countries like India.

However, even if the collection work in "Gene Banks" is considerably improved, it cannot be adequate by itself. The period for which plant resources, once destroyed in their natural habitats, can be preserved in "Gene Banks" is itself a subject of controversy. Thus there is always the risk of these stored plants being destroyed by accidents or the less visible harm done by inadequate or wrong documentation of the preserved plants. According to an expert, "After weighing all available measures for preserving endangered species under controlled conditions, we are repeatedly forced to the conclusion that the only reliable method is in the natural environment."

A mismanaged campaign

Judging from several recent statements and claims of the Indian Government in this regard, it would appear that it is quite alert to its responsibilities in this regard. According to the Seventh Plan document preparatory work has been done for setting up "Biosphere Reserves" in a few carefully selected and identified areas which have "enormous, pristine genetic diversities" (such as Nilgiri, Namdapalsa, Nanda Devi), and the implementation of the Biosphere Reserves Programme will start in the Seventh Plan with the Department of Environment acting as the nodal agency.

But apart from embarking on such expensive, often foreign-funded projects, the government and its various departments and officials have in general been following policies and practices which speed up genetic erosion. While publicising the spread of Green Revolution HYVs of narrow genetic base, often by making exaggerated claims on behalf of these varieties, extensions officials have generally not advised or cautioned farmers to continue to grow some crop of traditional varieties or to preserve seed of these varieties.

Forests known for their rich genetic wealth have been destroyed or simply submerged, often much in excess of real need for dams and other projects. Contractors, smugglers and corrupt officials have been allowed a free hand in large-scale felling of trees and smuggling of forest produce. Forests have been clear-felled on a vast scale and re-planted with Commercially profitable species of trees. As the Sixth Plan document admitted, "The natural ecosystems may represent our only hope for finding the basic material for restoring the health of completely devastated landscape such as much of the Himalayan hill slopes. The forests under management have been treated from the very narrow viewpoint of production of commercial timber and pulpwood so that they have been rapidly converted to stands of teak, pine or eucalyptus with no thought given for even the maintenance of species producing valuable minor forest produce".

Serving the farmer

If these trends are not checked, merely the collection and preservation of germ plasm in "Gene Banks" or even the creation of a few Biosphere Reserves cannot compensate for the genetic erosion caused by these factors. Moreover, from the point of view of ordinary farmers, of what use is the preservation of some traditional varieties if these are not made readily available to them when required by them. Generally the experience of farmers in their interaction with the government's extension staff is that while Green Revolution HYV seeds can be readily obtained, there is not even any mention of this fact that if and when necessary, seeds of locally lost traditional varieties can be obtained from the government by the farmers. In the way that the government publicises its Green Revolution, 'modernisation of agriculture' and other such achievements, it has seldom been informing farmers of the availability of seeds of traditional varieties with it, and how farmers who wish to benefit from this collection can do so. ☐

Comprehensive pollution control measures around power and coal projects

The Ministry of Energy is taking positive measures to strengthen environmental requirements and control pollution around power and coal mining projects. A sum of Rs. 320 crore has been provided for the augmentation, retrofitting and installation of electrostatic precipitators in 25 power houses. The expenditure incurred on afforestation and rehabilitation of the area around the power and coal mining projects would become a part of the project cost. Instructions have been issued for taking up afforestation work during the preliminary stages of the projects.

An integrated approach has been adopted to harness non-conventional energy along with pollution reduction, prevention of environmental degradation and preservation of ecosystem. Two major programmes have been launched : one relating to biogas development to provide methane gas for cooking; and the other relating to improved and smokeless chullhas to improve efficiency of combustion of fuelwood in scientifically designed chullhas with smoke elimination. ☐

Harnessing human resource for faster progress

Dr. A. N. Dutta

Human resource is basic input in any development process. Human resource management has so far been given a low priority in our country. The author here feels that time has now come to give it utmost importance and consider human input as an asset and not a secondary factor. The creation of a Ministry of Human Resource Development according to him is a novel step in the right direction to mobilise qualitatively the latent human resource available in the country to accelerate our march towards the 21st century.

A MAJOR QUANTIFYING premise is that the ountry will have a projected demand by 1990 someing about 200,000 trained computer professionals year against about 4,000 being produced now. f this, a certain proportion would have to be cholars, researchers, consultants and teachers of a igh calibre by international standards. The same quirement exists in almost all the frontier areas of odern science like bio-technology, nuclear and ace science, plasma physics, and even agriculture. lodernisation alone would not yield the desired sults unless there is a simultaneous upgradation of anagement techniques, standards of work organisaon and task planning. Several studies undertaken by e World Bank and our Government have brought bear the fact that by simply reorienting the lministrative and management techniques is it ossible to achieve a 200 per cent to 300 per cent improvement in performance. A thorough grasp of the fundamentals of human resources organisation both as a system and an accounting tool appears imperative in this context. This article seeks to explore into the fundamentals both as an accounting instrument and a working concept.

The creation of a separate Ministry for Human Resource Development at the Centre and an initial allocation of Rs. 1,500 crores to start with, despite a number of financial constraints at once bespeaks the Government's concern for infusing a dynamic performance into all human involvement programmes which will adequately respond to the country's challenging future needs. This is a highly novel approach to mobilise qualitatively the latent human resource available so that on the one hand, the growing manpower is sufficiently trained up to accelerate the country's forward march towards modernisation and, on the other, the country's ability to absorb faster the most modern technologies at the basic levels. Both the objectives set qualifying standards to our various manpower programmes in the context of the global march to high technology within the time frame of the next 15 years.

Why human resource development ?

For optimising the expected gains out of a massive programme it is necessary at the very outset to have a selective approach, in other words, a re-vitalisation is possible only when all such investments on human resource mobilisation are linked to returns. As a first step, different levels of employment embodying various categories and degrees of skill are directly linked with education, both at the academic and the professional level. A very sophisticated and scientific approach which could equate at different operational levels the three parameters of education, training

programme and career opportunities inter se can make the entire effort successful. The Seventh Plan rightly makes this idea the locus of a new programme approach for attaining the avowed objectives.

At the grassroots level, the scientific bias operates itself through three basic postulates. First, there should be proper training and organisation to make the idea feasible and workable all through including various intermix of morale, motivation and behaviour. Second and much more important is the accounting approach, in other words, optimising the return-investment relationship which will justify expansive operations on a broader scale both over time and with a comprehensive job coverage, with limited resources available. An effective measurement of the basic demand constitutes the vital strategic step for deciding the appropriate manpower input and then matching it with the specific needs and requirements at the unit or micro level. This entails such measures as :

(1) expansion, installation of new plants, stepping up capacity and|or diversification of operation,

(2) rationalising the technology bias through innovation and modernisation but in strict conformity to the standard operation,

(3) estimating production and sales targets,

(4) estimating personnel turnover through recruitment, retirement, promotion and transfer, and

(5) marking the environmental status, market competition and government policy. Since all these parameters are more or less changing, a working balance between demand (operating through technological changes and expansion programmes) and supply (training, development of manpower, recruitment) must be struck. Thus a balance between the external and internal forces is obtained at different sequential stages of operation.

At the macro level, the need for proper training of personnel gets the first priority. Specific training programmes have to be arranged to meet the requirements of different public sector industries (same would be applicable to private corporate sector industries), leading among these being electronic trade and technology sectors where a vast pool of qualitative personnel has to be built up. The newly established 'Department of Public Sector Enterprises' can ideally cater to all this and may have a thinking in this direction. The three core divisions of training, research and, consultancy could organise research work on typical problems and conduct case studies related to public sector projects while the consultancy division will be responsible for developing an operational infrastructure to advise public sector units on technical, commercial and, administrative problems and related issues.

And utilise innovative potential

How do human resource management administration along these lines help manifest a typical programme approach ? Contrary to traditional approach which only makes motivation and morale functions reactive to financial incentives alone, the new approach will tend to generate feasible solutions to solve some qualitative problems which are discrete, specific and sensitive to this type of system management. A proper direction of the resource-conversion process through a business enterprise will automatically synchronise with the objectives and the corporate organisational goals, through its own operational de-bottlenecking character. The three basic skills that are the product of the system are :

(1) technical related to the person's knowledge and proficiency to handle production-technical processes ;

(2) human resources management referring to the person's ability to interact effectively with people for work related matters ; and

(3) conceptual dealing with long range planning.

What is basically wrong with the business organisation management is to assign a *low priority treatment* to develop this human resource management skill and over-emphasise other functional skills which is the usual management practice. Time has now come to reverse the managerial flow and treat with utmost emphasis the renewed human resources management approach which considers human input as assets and not a secondary factor. Since people are primarily motivated by challenges and opportunities for development and activity, the main task of management thus becomes to ensure that HRM (Human Resource Management) develops both enabling and innovative capabilities to play a vital productive role. And that is the basic objective of the newly set up Ministry of Human Resource Development in a more consensitised form.

In a systems analysis, implementation of goals or desired objectives can be attained through realising certain discrete ends. This requires designing an inventory of approaches, methods and, media most appropriately suited to generating alternative solutions. Then some evaluative criteria are required for testing the output in the light of the objectives set earlier. In case certain objectives are not met, the approaches are scrutinised, objectives are re-examined and the system is tried for internal validation once again. Lastly, a follow-up plan is designed to collect data on the performance of executives which they demonstrate while working in the real situations. A summative evaluation is thus arrived at through a number of simulative steps.

Human resource accounting

It is interesting to have a look at the following table which lays a categorywise distribution of human

resource in the organised sector of our country in March 1978, as an illustration :

Table

Category	Percentage to Total
1. Administration	0.5
2. Technical and Professional	6 5
3. Clerica	17.9
4. Production Process	20.5
5. Unskilled and Others	54.6
	100.0

Traditionally, accountants have paid greater attention to physical inputs in firm accounting contrasted to human resource. No part of the cost of human resource was shown as computerised item and recorded as an asset on a balance sheet. Too much emphasis on control systems like standard costing and budgetary controls without recording their impact on human behaviour has precipitated unexpected future of technically well designed control systems. HRA is a new developing branch of accountancy yet remains a least definitive aspect of management.

The assumption that the cost of human resource will rise in future is primarily based upon data showing the increasing importance of productivity (and income) differentials attributed to skills and knowledge acquired in informal education. Another factor in the increased cost of human resource is the rising level of education received prior to employment. Acceleration of technological and other developments that render the existing knowledge obsolete within a relatively short time span is yet another element in this context, whose importance however is gradually increasing. This is true, especially because a segment of the labour force will be subject to such changes since the routine jobs will become automated.

Its impact on economy

What will be its impact on a growing economy like ours ? In a dynamic economy, the results will be more pronounced. The net effect will tend to be discretely felt in a growing firm on a micro scale and, generally, in a sensitive mature economic where some firms or industries regularly expand while some others stagnate or decline, this will become increasingly manifest over time. In such cases, with the emergence of new products, newer vistas of production functions, cyclical and structural shifts which the famous economist Kuznets attributes all to a swiftly advancing economy and with new technology tie-ups on an ascendancy the relevant factors such as the pace of advancement, inter-industry shifts, changes in the structure of the labour force and substitution of capital for labour in manufacturing, along with the rise of services in the economy as a whole will expose a strong sensitivity to the varying differences between costs of human resources and benefits accruing therefrom over time The quantum of benefit which is closely relatec to the nature and magnitude of investment in a total Plan outlay of Rs. 3,22,365 crores will be tremendous indeed.

Finally, mobility within the firm, if planned, appears one of the benefits attributable to human resource investment. Through a logic based on inter-firm mobility, it may be safely assumed that the individual's mobility is largely under management control.

Investments in the human organisation are also less affected by the mobility among the firms than are investments in individual training and development A high quality organisational climate is highly conducive to framing such decisions as to remain within the firm, which would tend to lengthen the useful life of this type of investments.

and benefits

Summing up, human resource accounting has already generated proficiently a series of useful information quanta fundamental to the potential use of various types of managements concerned. The principal suggested benefits are : first, an increased awareness of management of human resource aspects of business organisations resulting in better management of such resources ; secondly, inclusion of investments in human resource providing a more adequate basis for appropriately deciding allocation of resources such as, budgeting, capital expenditure decisions, etc.; and thirdly, inclusion of human resource managements yielding a more complete and total picture of performance management

The trend towards increased social responsibility sets he stage for consideration of human resource in the context of the overall concern for people. The trend has positive implications in so far as it shifts the emphasis from physical to human resources It is also possible however, that the overwhelming concern with responsibilities related to public expectations may detract attention from human problems within the corporation. As Marrow (a leading contemporary management expert) observes, "What most executives seem to miss..... .....is that business can begin discharging its social responsibilities by humanising its managerial practices". □

Using fluoride, a health hazard!

Dr. A.K. Susheela

Fluoride in excess of permissible limits in water, food, etc. is a great health hazard. It causes various kinds of fluorosis. India abounds in fluoride. A staggering majority of our States, as many as thirteen, are rich in fluoride sources thus putting millions of our populace to the potential risk. Fluorosis can occur even to a child still in the mother's womb. In this article the author throws light on various aspects of fluoride-its prevalance, mode of action and the dangers posed by it to health. The author feels Indians do not need fluoride particularly in tooth paste, as most of our land is already endemic with fluoride. She suggests various measures to chcek the growing menace of fluoride.

A FLUORIDE IS a salt of an element called fluorine. Fluorine is the most highly reactive element of the so called Halogen family (which include chlorine, Bromine, Iodine, etc.). Fluorine is estimated to be the 18th most abundant element in the earth's crust. As fluorin ies highly reactive it generally occurs in combination with other elements (say calcium, copper, lead, phosphorus, etc.) as fluorides Fluorides are abundant in earth's crust.

Sources of fluorides

A. Earth's crust : The three most common sources of flouride minerals are, (i) Flourspar (Calcium Fluoride), (ii) Apatite and rock phosphate—a calcium, phosphatefluoride complex, and iii) Phosphories.

Fluorspar Fluorspar occurs in, (i) Lime stone, (ii) Sand stone, (iii) Granite, (iv) Quartz, (v) Calcite, and (vi) Barite The major deposits of the above are found in nine states: Gujarat, Rajasthan, Andhra Pradesh, Bihar, Himachal Pradesh, Jammu & Kashmir Madhya Pradesh, West Bengal and Tamil Nadu.

Apatite and Rock Phosphate : The two major apatite States in India are Bihar and Andhra Pradesh. Minor occurrences have been reported from other States, viz.. Gujarat, Tamil Nadu, Orissa, Rajasthan and West Bengal.

Phosphorites : The third major source of fluoride is the phosphorites—the sedimentary phosphate depo-sites. The two regions in India with abundance of phosphorites are : North-West of India, comprising the States of Uttar Pradesh, Jammu & Kashmir, and Rajasthan; and Tamil Nadu. There are a few minor occurrence in other Sates also.

Secondary dispersion of fluorides is known to occur in soil, river water, ground water and atmosphere. The secondary dispersions correlate well with primary occurrence of fluoride containing minerals.

B. Water : Analysis of water samples from rivers, streams and sources of surface and ground water (open wells, tube wells) from 12 States have shown that it is contaminated with fluorides ranging from 0.2 to 38.0 parts per million (ppm=mg/litre). And these waters are used for irrigation, live stock and human consumption besides other routine uses of water.

C. Food : As the soil and water are contaminated with fluorides agricultural crops and foder of livestock have high affinity to absorb fluoride containing salts. Fluoride is stored in different parts of the plant. Different plants are known to behave differently. Some plants store fluorides in leaves, fruits, grain, stem and tubers.

Various items of food, viz., cereals, vegetables, spices, oil, soft drinks, fruits, fish meat, sugar, salt, dry fruits and a variety of other items have been analysed and fluoride-content has been studied by various scientists and data reported from Madras, Hyderabad, Bombay, Calcutta and from North India. *It is hard to find an item which has no fluoride in it.* The fluoride content is more in cooked food compared to uncooked food. It is common knowledge that Indian food is highly spiced, and the commonly used spices have a very high flluoride content. Although the rural Indian population can ill afford to use expensive spices, they invariably consume a hugh quantity of fluoride in the form of chewing either the areca nut betal leaf or tobacco, which have a higher fluride content. As there is movement of food grains and other agricultural products between different States within the country, there is considerable possibility that even in non-endemic States health problems exist due to excess ingestion of fluorides.

D. Drugs : Fluorine reinforces the action of many chemical molecules and this aspect has made the element useful in pharmaceutical industries. The efficacy of a drug frequently depends on how soon the body metabolizes the molecule and terminates its action. By inserting fluorine at the weak point in the structure of a drug, chemists have made cetrain pharmaceuticals more resistant to breakdown in the body, thereby reinforcing their action. Some of the most popular fluorine-containing medications are : fluorosteroid, fluorouracil, fluorine containing antihistaminics, tranquilizers, anaesthtics and diuretics. Besides, sodium fluoride, either by itself or in combination with calcium, vitamin D and estrogen are prescribed for patients of osteoporosis and the treatment continues for 1—12 years with a dose of 50-80 mg of sodium fluoride per day. Sodium fluoride therapy for otosclerosis is also common. For Dental Caries (cavity formation) Fluorine tablets, fluoride mouthrinse, fluoride varnish and fluoride containing tooth pastes are also prescribed and used.

Permissible limit of fluoride

Permissible limit of fluoride is often based on the fluoride content of drinking water (potable water) The amount of fluoride that is permissible for tropical countries is quite different from the amount that is permissible for temperate countries where the temperature is in the cold|milder range.

In India, the permissible limit of fluoride is 0.5-1.5 ppm (parts per million) or 0.5-1.5 mg per litre. However, as agricultural crops and other food items are getting increasingly contaminated with fluoride, there is growing concern and the permissible limit of fluoride in India should be reduced to 0.5 ppm (or 0.5 mg per litre) and not beyond.

Dangers of excessive fluoride

Fluorides when ingested or inhaled in excess can cause several health problems. Some individuals are extremely sensitive to fluorides and may suffer from mild or severe manifestations. An individual may suffer either from non-skeletal manifestations or skeletal fluorosis or dental fluorosis or a combination of these manifestations.

Non-skeletal manifestations : The following non-skeletal manifestations due to ingestion of fluoride in excess are known to occer :

—Neurological manifestations
(nervousness, depression, tingling sensation of fingers|toes, excessive thirst and tendency to urinate frequently and excessively);

—Muscular manifestations
(muscle weakness, stiffness, muscle spasm and pain in the muscles);

—Allergic manifestations
(allergic manifestations can be of various nature; very painful skin rashes which are peri-vascular inflammation has been reported to be common among women and children);

— Gastro-intestinal manifestations
(diarrhoea, constipation, acute abdominal pain, nausea and vomitting)

A word of caution in this context is necessary. It should not be misunderstood that the above non-skeletal manifestations are always due to Fluoride Toxicity. Fluoride is one of causative factors. Fluoride was never considered as a causative factor until recent years when researches in the field have provided ample evidence to suggest that fluoride can cause non-skeletal health problems of the nature mentioned above.

Skeletal Fluorosis : Skeletal Fluorosis affects young and old alike. Fluoride ingested by a mother can accumulate in the skeleton of the growing foetus as there in no placental barrier for fluoride. There are reports revealing infant mortality shortly after birth with calcification throughout the blood vessels. Fluoride is known to induce calcification of soft tissues. viz., ligaments, muscles, tendon and blood vessels

In India, in endemic States, children at the age of 5 or 6 have revealed classical manifestations of Fluorosis. The major clinical manifestations are severe pain in the backbone (vertebral column), joints and pelvic girdle (hip region). Calcification of ligaments of the backbone and joints leads to stiffness of the vertebral column and immobile and painful joints respectively. Deposition of fluoride in the form of calcium fluoroapatite in the skeleton leads to increased girth, thickening and density of the bone. One of the serious repercussions of thickening of bone is construction of intervertebral foramen (opening in the sides of the vertebral column through which the nerves travel to the extremities) thus exerting excessive pressure on spinal nerves leading to paralytic condition. There is no treatment or cure for this disease but it can be prevented.

Dental Fluorosis : In Dental Fluorosis, it is possible to identify white or yellow glistening patches on the teeth which may eventually turn brown. The yellow and white patches when turned brown present themselves in horizontal streaks. The brown streaks may turn black affect the whole teeth and may get pitted, perforated and chipped off at the final stage.

Dental Fluorosis is prevalent in children who are born and brought up in an endemic area for Flourosis. However, if an individual during adolescence moves from a non-endemic area to an endemic area for Fluorosis, it is unlikely that he/she may get afflicted with Dental Fluortsis, but may get afflicted with Skeletal Fluorosis and may also suffer from non-skeletal manifestations.

Dental Fluorisis not only poses cosmetic problems but has serious social problems too. Madras Dental College, Madras, has been treating fluorosed teeth by capping with plastic moulds--a technique which is so well perfected that it is not possible to differentiate between a good natural teeth and the one prepared with the aid of a mould. This has been considered as a boon by many a victim of Dental Fluorosis. The problem in this approach is that the capital cost involved is considerable and that the patient afflicted with the disease has to visit the hospital for capping. Lately, Madras Dental College has also introduced laminated veneering of teeth so that the ugly looking brown and black teeth is plastered and look pretty. This approach has certain advantages over capping as this technology can be taken to the homes of the afflicted and service rendered at the doorstep with least capital cost involvement.

How does fluoride act?

Fluoride is known to act with body tissues in a number of ways :

Fluoride when ingested or consumed has a tendency to accumulate in almost all the tissues. The highest amount of fluoride is known to be deposited in one variety of bone—cancellous bone (spongy bone) than the other cortical variety.

Fluoride is known to inhabit protein synthesis theerby hampering the production of proteins in the body.

In the tooth and bone, which are hard tissues, the matrices are made up of a special fiber known as collagen protein, on which calcium ions get deposited in a special manner. Fluoride distorts the structure of collagen protein and the process of calcium deposition becomes abnormal and the bone and tooth also become abnormal in their structure and function.

Fluoride is known to inhibit great majority of enzymes (which are biological catalysts) and derange the metabolism, as a result many chemical substances are produced in less quantity than that is required. It is also true that certain intermediary products begin to accumulate which is also not a healthy process.

The chemical machinery of the body is disturbed and the body functions are disturbed too.

Vulnerability (susceptibility) to fluoride toxicity. Level of haptoglobin (Hp) in blood provides information on the susceptibility of a particular individual to the disease. High Hp content in blood is suggestive that the individual is vulnerable to fluoride toxicity. If the Hp is low, the individual may not have clinical manifestations, even if high fluoride content is ingested or inhaled.

Male members normally have high Hp as male sex hormone stimulates its production. Female sex hormone inhibits its production. Because of this disparity in Hp production and level in blood it has been observed that greater number of males are afflicted by the disease compared to females. There are also females with greater Hp content and they are afflicted by the disease.

There are possibly other ways in which fluoride acts in the body which we do not know at present. Only future investigations may throw light.

Prevalence of Fluorosis in India [Statewise report]

Attempts have been made to enumerate the incidence of the disease in different States, which will not only reveal the widespread occurrence of Fluorosis but also the gravity of the situation.

Andhra Pradesh : In Andhra Pradesh, the well (open well and tube well) water samples are very highly polluted by fluoride. The maximum fluoride recorded so far is 25 ppm. The Nagarjuna Sagar Dam construction has brought some relief to people in obtaining water with permissible limits of fluoride. But the efforts are grossly inadequate.

Delhi : The municipal water supply being grossly inadequate, the residents of Delhi in certain zones depend to a great extent on tube well water. Fluorosis, both Skeletal and Dental forms, have been recorded in the metropolis. The incidence of Fluorosis in the villages around Delhi is high. Out of 339 inhabitants examined in a village near Delhi, Fluorosis was found prevalent in 80 per cent of the adults and 60 per cent of the children The tubewell water contaminated with fluoride and used for agricultural purposes and livestock enhances the magnitude of the problem.

Haryana : The potable water of Dayalpur, Atali, Chhainsa, Machgar and Sotai villages have fluoride content ranging from 1.89 to 3.83 ppm. At Sotai village, where the fluoride content of water is 3.83 ppm, 98 per cent of the children suffer from Dental Caries and 77 per cent from Flourosis. It is evident that in spite of higher fluoride content in water, the incidence of Dental Caries is greater. In Machgar village where the fluoride content of the potable water is 0.64 ppm, 65 per cent of the children suffer from Caries and 13 per cent suffer from Dental Fluorosis.

Gujarat : In Lillya and Lathi taluks in Amreli district with total population of 1.54 lakhs, the fluoride content of water samples from the available sources—open wells, tube wells, ponds and wells on river banks ranged from 0.4 to 8.0 mg|litre. The most severlly affected villages are Hathigadh, Haripur, Sajantinba, Gundran, Eklera, Asodar, Kutana, Khara, Antalia and Dhangla. Those affected are unable to get up from the bed or from sitting posture by themselves and depend on a rope tied to the roof of the room| house for support. This is a very common sight in the affected villages in Gujarat and Rajasthan States.

Karnataka : In Mudargi, Kirapur, Kalakori and Musukeppa villages of Dharwar district in Karnataka potable water has Fluoride in the range of 5.4 to 12.8 mg|litre and Fluorosis, Dental and Skeletal froms, is prevalent.

Punjab : In Bhatinda Sangrur and Ferozpur districts in Punjab, endemic Flourosis has been known to be a serious health problems and it is estimated that 33 per cent of the population in these districts is exposed to the risk of endemic Fluorosis. In fact some of the classical reports on endemic Skeletal Fluorosis in literature have focussed on the patents in the Punjab State.

Rajasthan : The affected areas in Rajasthan are Jodhpur, Bhilwara, Jaipur, Nagur, Bikaner, Udaipur, Barmer and Ajmer. These areas have been nick-named "banka patti" meaning bent strips—as most of the villagers have turned into hunchbacks An analysis of 5000 samples of water by the Defence Research laboratory revealed that 91 per cent of the water samples in Rajasthan is unfit for human consumption.

Tamil Nadu : In the distrits of Salem, Tanjore, South Arcot, Dharmapuri and Kanyakumari high levels of fluoride in water have been reported and Fluorosis is a serious health problem It has also been noted that in areas with low fluoride that disease does reveal severe manifestations. They may possibly be due to two factors. High fluoride content of food or|and low calcium and high alkalinity of water besidse fluoride.

Uttar Pradesh : In an epidemiological survey of Khanjapur, Ujera, Sikri, Madheya Khan Ka Parva villages, Teotia found that fluoride content of potable water ranged from 0 62 to 25 0 mg|litre and that the incidence of Dental and Skeletal Fluorosis is high A prevalence rate of 24 per cent and 30 per cent of Dental Fluorosis exists in two villages of Varanasi (Banaras). In Uttar Pradesh it is observed that Dented Fluorosis was prevalent even at fluoride level of 0.64 mg|litre in domestic water supplies. The fluoride content of cooked and uncooked food items attributed to the fluoride burden of the body

Incidence of Dental and Skeletal Fluorosis have also been detected and recorded from Maharashtra, Madhya Pradesh, Bihar and Orissa States.

Fluorosis—A global problem

India is not the only country which is facing serious health problem from fluorides being in exc in the environment. In Algeria, the problem of Flu rosis exists. China has severe food borne Fluoros In Argentine (in the province of La Pampa), t ground water is highly contaminated with fluoride Kenya has severe problems with Fluorosis affecti the great majority. Kenya is the only nation in t world which has banned fluoride tooth paste adve tisement on television and radio under the Pharma and Poison Act. The Ministry of Health of Ken has also issued a directive forbidding the use of flu ride tooth paste by children in Kenya. In Tanzani the potable water has fluoride content ranging fro 3.2 to 92 ppm.

Certain parts of Japan and Thailand also ha water borne Flurorosis. South Sea Islands also fa health problems due to excess fluoride in drinki water. Fluorosis is prevalent in Keolack in Seneg in Morocco, Fluorosis exists. In Kizilcaroren, regi of Turkey fluoride in potable water ranges from 3 to 4.9 ppm and endemic Fluorosis is prevalent.

Industrial Fluorosis is a serious health proble facing the highly industrialized and developed natior This list is by no means complete.

Technology Mission on safe drinking wate

It is highly rewarding to note that adequa emphasis has been laid on removal of excess fluori from drinking water under the Technology Missi for providing safe drinking water to rural Indi Two States—Haryana and Andhra Pradesh—ha been identified for tackling fluoride problem duri 1986-87 All available methods for removal of flu ride will be experimented upon and people's acce tance will also be sought. The operations in ea of the States will be closely associated with heal education programmes. All India Institute Medical Sciences is involved in the implementati of this programme in Haryana and is totally cor mitted to it.

Does India need fluoride tooth paste

The problem that a substantial part of our pop lation faces is due to excess ingestion of fluori hrough a number of sources. The fluoride burd of the body is ever increasing and the health pro lems are also on the increase. Efforts are bei made for curtailing the major sources of fluori intake. It is in this context that AIIMS has bee arguing for a ban on fluoride tooth paste in Indi Fluoridated variety of paste is known to hav fluoride in the range of 800-1000 ppm ! It enormously high in a country like India whe fluoride is already excessively present in the enviro ment. It is very gratifying to note that the Minist of Health has already taken action and the Dr Controller of India is to get the fluoride conte

different brands of tooth paste ascertained the content to be brought down to permissible level. The fluoride content is to be inscribed on tooth paste packaging as well. If the fluoride content in drinking water and tooth paste is brought under control it would provide enormous relief to the people.

Preventive measures

(1) Every source of potable water in the country, whether in an endemic or non-endemic State, should be checked for fluoride Water with fluoride more than 1.5 ppm should not be used for consumption either for human or livestock or agricultural purposes.

(2) Existing tube well water if contaminated with excess fluoride, by digging the same well deeper it is likely that water with permissible limits of fluoride may be obtained.

(3) Indigenous defluoridation technology has been developed in the country which can be implemented at the community level or at the domestic level for obtaining water with permissible limits of fluoride.

(4) If the symptoms of Fluorosis are detected at the very early stages, the best possible remedy is to avoid the major source of fluoride totally.

(5) If the source of fluoride is withdrawn and intake of fluoride is negligible, the bone while undergoing remodelling, can rectify the damage caused and during early stages the individual may get completely relieved of the harmful effects of fluoride.

(6) Ingestion of vitamin C or ascorbic acid can cause considerable relief. It is also important that the diet should have adequate daily intake of calcium so that absorption of fluoride into blood circulation is minimum.

(7) All possible source of high fluoride content, viz., food, water, drugs and tooth paste should be avoided.

(8) Pain in the backbone, joints and hip region should not be dismissed. Hospital intervention should be sought. ☐

(Courtesy : AIIMS Public Lecture)

Non-conventional energy sources tapped

More than six lakh biogas plants have been set up in the country for generating energy for domestic purposes. This amounts to an annual saving of more than 25 lakh tonnes of wood valued at Rs. 100 crore and providing fertilizer output of 1.20 crore tonnes valued at Rs 100 crore annually.

Five demonstration wind farm projects with an aggregate capacity of 3.3 MV have been established. A pilot plant based on incineration of urban solid waste with a capacity of 3.75 MV is under construction in Delhi. A 50 KW solar thermal power plant is also being installed Electric power for street lighting and community purposes through photovoltaic systems has been provided to more than 250 villages

Though the exact cost of power generation from renewable non-conventional energy sources differs from site to site, it would on an average generally compare favourably in real terms with the cost of generation from hydel, thermal and nuclear systems.

World food assistance for Rajasthan projects

India is to get food assistance amounting to US $ 25.8 million (equivalent to Rs 32.3 crore) from the World Food Programme (WFP) for two socio economic development schemes in Rajasthan

Under the two agreements signed in New Delhi recently, 41,200 tonnes of commodities valued at US $ 12 million, will be committed to forestry project and 55,700 tonnes of commodities, costing US $ 13.8 million, are earmarked for Indira Gandhi Nahar Project in Rajasthan.

In the Rajasthan forestry projects, food commodities will be distributed at subsidised rates to forestry workers in the tribal areas of Banswara, Bhilwara, Chittorgarh, Dungarpur, Kota, Sirohi and Udaipur districts for a total of 25 million workdays.

Food will also be provided at subsidised rates to workers on the Indira Gandhi Nahar Project (IGNP). It is expected that WFP will extend to 31 million workdays of employment over a period of three years.

(continued from page 5)

ment through labour-intensive schemes such as major, medium and minor irrigation works, soil conservation, afforestation and village and district roads necessary to open up the area for agricultural production. In the Fourth Plan, this programme was re-designated as Drought Prone Area Programme and reoriented as an integrated area development programme with the objective of developing the land, water, livestock and human resources of these areas. The programme has been in operation in 511 blocks of 70 districts in 13 States.

The strategy adopted in the Sixth Plan for DPAP will continue during the Seventh plan which would inter-alia include increased stress on activities which can contribute directly to the restoration of the ecological balance and increasing the per capita income through the effective development of land and other natural resources including efficient utilisation of scarce water, conservation of scanty rainfall and arresting its run-off in drought-prone area. Accordingly, the Programme, as at present, would continue to be implemented as an integrated area development programme rural than as a programme merely for creating increased employment opportunities.

4.LAND REFORMS. Land reforms have been recognised to constitute a vital element both in terms of the anti-poverty strategy and for modernisation and increased productivity in agriculture. Redistribution of land could provide a permanent asset base for a large number of rural landless poor for taking up land-based and other supplementary activities. Similarly consideration of holdings, tenancy regulation and updating of land records would widen the access of small and marginal landholders to improved technology and inputs and thereby directly lead to increase in agricultural production.

A land reform policy with a five-fold objective was continued in the Sixth Plan. The objective envisaged, (i) abolition of intermediary tenures, (ii) tenancy reforms aimed at security of tenure, regulation of rent, and conferment of ownership rights on tenants, (iii) ceiling on landholdings and distribution of surplus land, (iv) consolidation of holdings and (v) compilation and upgrading of land records. Land reforms in the Seventh Plan would be looked upon as an intrinsic part of the anti-poverty strategy.

In addition of the Central programmes, some of the State Governments have their special employment programmes in rural areas. But, unfortunately, the West Bengal Government has no schemes of its own to eradicate poverty in rural areas. ☐

Oilseeds production raised in Seventh Plan

Under a special programme oilseeds production is to be raised from 131.00 lakh tonnes in 1984-85 to 180.00 lakh tonnes by the end of the Seventh Plan. This will be further stepped up to 250 lakh tonnes by the turn of the century. The target for the year 1986-87 is 148.00 lakh tonnes. Of this 139 lakh tonnes will be edible oils. Groundnut accounts for about 55 per cent of total oilseeds production.

One hundred eighty districts spread over 17 States, already having sizeable area under oilseeds crop or having great potential for it, have been selected for a special thrust for oilseeds production. The programme to increase oilseeds production is estimated to cost Rs. 170 crore during the Seventh Plan, the share of the Central Government being around Rs. 100 crore. ☐

Record export of garments

Export of garments from India has recorded a growth of 74 per cent in the last three years. From a level of Rs. 629 crore in 1982-83, exports have touched a figure of Rs. 1096.72 crore in 1985-86.

The rising trend is continuing during the current year and it is estimated that during January to June, 1986 exports of readymade garments have been about Rs. 72 crore higher than exports during the corresponding period of 1985. The emergence and growth of garments as an export sector in India has been phenomenal considering that even in 1970-71 export of this item was of the order of only Rs 12 crore.

The major buyers of Indian garments are USA, the Soviet Union, EEC, Japan and Canada. Garments are among the 14 thrust items identified for intensive promotion in the Government's current export strategy. ☐

More iodised salt to be produced

The Government has decided to give subsidy, effective from August 1, this year to iodised salt manufacturers and to supply potassium iodate free of charge. Over 400 entrepreneurs have been given permission to set up iodised plants. So far 91 units with an installed capacity of 17 lakh tonnes have gone into production in the States of Gujarat, Rajasthan and Tamil Nadu. The Government has decided to iodise the entire edible salt by 1992. This would mean that the current level of 3 lakh tonnes of iodised salt production will have to reach 52 lakh tonnes by 1992.

Presently, 14 crore people in our country are exposed to severe iodine deficiency disorders and these figures may touch a startling 20 crore if immediate steps are not taken to eliminate this deficiency. ☐

(Continued from page 16)

TABLE 2
Growth of Households

(in million)

Year	Rural	Urban	Total
1951	60.6	12 8	73.4
1961	68.6	14.9	83.5
1971	78.0	19 0	97.0
1781	73.5	29 1	122.6
1983	98 4	30 7	129 1

Source: NBO, *Handbook of Housing Statistics* 1982-83.

The rate of growth of housing stock has been lagging behind the rate of growth of households with the inevitable result of increasing the housing shortage. The housing shortage increased from about 9 million units in 1961 to about 24.7 million in 1985 and is estimated to cross 29 million by 1990. □

Vigours measures to eradicate leprosy

The Multi-Drug Therapy (MDT) for leprosy is to be extended to 76 highly endemic districts in the country during the Seventh Plan. The other 125 districts moderately affected by the disease will be brought under the scheme in the Eighth Plan.

Today four million people suffer from leprosy in our country, of which nearly one-fifth are children. Every one out of four affected children gets deformities rendering him handicapped As a result the Leprosy Control Programme has undergo a significant qualitative change. The emphasis now is on leprosy eradication in a time-bound manner.

Centrally sponsored National Leprosy Eradication Programme, covers about 92 per cent of the patients in the country. So far, two million cases have been fully cured There are 403 leprosy control units, 661 urban leprosy centres, 6986 survey education treatment centres and 190 district leprosy units in the country today. In addition, over 100 voluntary organisations are working in this field.

It is expected that leprosy will be controlled successfully before the end of the century. □

Urban Development Ministry forms a Scientific Advisory Committee

An eight-member Scientific Advisory Committee has been constituted for the Ministry of Urban Development to advise on development of integrated and coordinated scientific and technological programmes. It will take steps for a systematic interaction between the users and the Research and Development institutions concerned with the activities of the Ministry.

It is also to advise on policies and programmes to develop indigenous capabilities in scientific and technological research and to evolve short-term and long-term objectives and plans for upgradation of technology in areas related to the activities of the Ministry. □

Record procurement of Jute

A record quantity of over 28 lakh bales of raw jute was procured by the Jute Corporation of India in the jute year July 1985--June 1986 as against the average yearly procurement of 8 to 10 lakh bales Almost all the jute that was offered for sale by the farmers was bought at the minimum support price. The previous maximum was 17 61 lakh bales in 1981-82.

For the first time, the statutory minimum price of raw jute and Mesta was announced before the sowing of crop in March, this helped the farmers to take a view on the extent of sowing.

The large procurement also led to increased hiring of storage capacity for jute and recruitment of additional hands, thus increasing employment. JCI has geared itself for another massive price support operation during the current jute year (July 1986 – June 1987), which was launched in July in West Bengal.

A scheme of buffer stock of raw jute has been stated this year to ensure availability of raw jute to the mills at reasonable prices and to help farmers in the long run by ensuring stability in raw jute price. Initially, nearly 6 lakhs bales are being kept as buffer stock with the mills.

The Government is taking a number of steps to safeguard the interests of jute industry against competition from synthetic substitutes. It has been decided to introduce compulsory use of 100 per cent new jute bags by cement industry. In addition, the Railways have been asked to withdraw their earlier order for packaging salt in synthetic bags so that jute bags may be used for this purpose.

Besides higher rates of cash compensatory support, additional measures are presently under consideration of the Government to boost exports of jute goods. In spite of competition from synthetics, the domestic consumption of jute goods during 1985-86 was one of the highest in many years and regular government orders to jute mills for sacks are believed to have prevented large scale closure of jute mills during the lean season (April-July) last year. □

BOOKS

Planned development

Essay on Economic Progress and Welfare in honour of I.G. Patel. Edited by S. Guhan and Mona Shroff, Published by Oxford University Press, Bombay, Calcutta.

A dozen and more essays in the book covering the period between 1949 to 1982 throw a floodlight of reason on topics about planned economic development of India.

The thinking on planning and progress has gone through many phases in the last thirty years. The Mahalanobis model, the economic crisis in the mid-1960s, the change in policy mix and the Green Revolution, the realisation that poverty cannot be removed by growth alone and the recent move to liberalise economic policies and market incentives greater play. Dr. I. G. Patel, to whom the book is dedicated, was one of the most influential participants at the policy-making level in the long span of Indian experiment.

These essays, offended by a distinguished group of economists, civil servants and politicians are addressed to diverse issues raised by Indian experiences, planning techniques, plan performance, the public sector, feed and role of exports, relations with the IMF, the debt problem. The first plan document in 1951 drew attention to the long-term aspirations of the people and provided a framework to ministries of the Government to look beyond the new budget. The mood was one of confidence and hope.

As the First Plan progressed, there was recognition of planning being a long-term process. The planners conceived a scientific model for the Second Plan under the guidance of Prof. B. C. Mahalanobis. The intellectual basis of planning was to emerge only with the formation of the Second Plan (1956—61). Many foreign planners like Frisch, Galbraith, Kaldor and many others were heard. A second group of contributions relate to wider issues of development theory. V. V. Bhat seeks to an institutional framework for promoting public sector performance from an alaysis of a wide set of country experiences. Deena Khatkhata deals conceptual and data problems connected with the measurement of real interest rates, the maintenance of which is an issue of practical importance. Paul Strrien's easy explore ways outdo the fundamental dilemma based by the policy makers in maintaining food prices at levels that are "remunerative" to producers and fair to consumers. Food aid becomes relevant in this connection and Jagadish Bhagwati enamates the wider welfare effects of aid in this form.

Amrtya Sen relates wellbeing to functioning achievements and positive freedom. Partha Dasgupta and Debraj Roy argue poverty can be as much consequence as a cause of malnutrition. The third group is addressed to external environment within which developing countries face problems of adjustment and growth. In these essays the contribution by T. N. Srinivasan, Jean Baneth and Sidney Dell are noteworthy. It concludes with a symposium in which former Finance Minister, like C. Subramaniam and H. M. Patel and senior civil servants like B. K. Nehru, L. K. Jha and S. Boothalingam reflect the role of professional economists in the Government.

S. Banerji

Econometrics

Introduction to Econometrics—Principles and Applications (Second edition 1983). By G. M. K. Madrani. Published by Oxford & IBH Publishing Company, New Delhi, Pages 412, Price Rs. 45.

Economics is accepted as a Social science in its own right. The basic theorems and tenets explain the relationships between different economic variables as to what would happen when certain conditions prevail. These conditions, however, are not unchangeable, more so, when random changes in variables occur. In such situations, the branch of the discipline called econometrics combines economic theory with statistical and mathematical tools and tries to evolve relationships which are empirically tested and used for forecasting, thus improving its utility for future events. It is, however, a matter of concern that econometrics has not reached wider understanding in our country. The author has brought the book, which serves the basic requirements for its popularisation.

The book is designed in two parts, viz., the first part delineating basic concepts in statistical theory, probability, distributions and inference; the second part deals with econometric principles, covering definitions of basic terms, explaining simple and multiple regression analysis, estimation of parameters, tests, etc. There is a masterly exposition of functional forms of regression models besides lucid discussions on problems of bias, lagged variables, identification problems, etc.

The author builds up from scratch as it were and builds up an awareness and imparts the knowledge in a clear and lucid style. The book ends up with statistical tables, test statistics, and bibliography be-

sides an Index. One only wishes that part one of the book is expanded to incorporate other basic mathematical concepts like matrices, inverses integration, etc., and part two provided with solutions|answers to important assignments, as this would make the book an all-in-one. Even as it is, this book could very well be considered as a masterpiece, enabling any serious student to become a practising econometrician. The book, priced reasonably, adds to its utility.

R. C. Srinivasan

Planning for tribals

Planning Strategy for Tribal Development. By M. L. Patel. Published by Inter India Publications, WZ-96-V, Raja Garden, New Delhi. Pages 191. Price Rs. 180.

Tribal development as part of our planning strategy is of recent origin. It took the Government full two decades to realize the plight of scheduled tribes, that this class also could contribute towards the overall development process ; and that tribals also form an important social group. In the Fifth Five Year Plan some headway was made towards this direction and a tribal sub-plan was formulated within the broad framework of Integrated Tribal Development Programme. As part of the strategy a tribal sub-plan area is to be delineated on the basis of tribal concentration, "so that special deal may be given to it not only in choosing the economic and social development programme but also in funding the resources from various sources such as inflow of funds from state plan sector, special central Assistance, Central sector, Centrally sponsored programmes and financial institutions" One such area is Mandla district of Madhya Pradesh which also happens to be the area of field study and doctoral work of the author of the present book. Mandla district has 60 58 per cent tribal population. Therefore, it comes under tribal sub-plan area, the requirement for which is 50 per cent or above tribal population

The author in his present work has sought to evolve a strategy for tribal development on the basis of his study of weekly markets and annual fairs which is a traditional feature of tribal culture in Madhya Pradesh. He has made an extensive survey of 85 markets and 28 annual fairs After analysing the data collected, he identified 8 growth Centres, 16 service centres and 26 growth points to arrive at growth foci system for Mandla District While formulating his strategy, the author discusses the theories of regional planning namely, the central place theory, theory of special diffusion, and the growth pole theory. Having discussed the rationale of each of them in chapter 6 and working out the centrality scores in each case he found each theory a misfit in the case of Mandla However, these have helped him evolve a growth foci system based on optimally located market centres. Towards the end of the book he gives the example of the successful implementation of his growth model in the case of Tribal sub-plan strategy for Mandla Tribal district.

There are several places in the book which would evoke discussion especially in chapter 7 when the author discusses Gunnar Myrdal's concepts of "backwash effects" and "spread effects". These effects start originating the moment development process gets off the ground. In this context be throws open some unanswered questions for further research and study.

At first glance the book would appear to be a study of market surveys and annual fairs. To some extent it is true also. At times one may find repetition of one idea at several places, also some erroneous construction of sentences, etc. These flaws notwithstanding, the book forms a significant contribution to planning strategy for tribal development.

Aditya Kumar Trivedi

Essays on rural development

Rural Development in India—A Multi-Dimensional Analysis. Edited by : T. K. Lakshman and B. K. Narayan. Published by Himalaya Publishing House, Bombay. Pages 325. Price Rs. 190.00.

In this book containing 27 essays written by different contributors, a vast ground has been covered on the subject of rural development in India. The book has been dedicated to Prof. K. Venkatagiri Gowda, once a Professor of Economics in Bangalore University.

In his essay on some neglected factors, V.K.R.V. Rao suggests that the task of integrated rural development is hampered by not having a policy of an economically viable minimum agricultural holding. This policy should be extended to the maximum possible extent to the existing marginal and sub-marginal farmers. It will make Indian agriculture a more worthwhile occupation for the vast number of cultivators who now account for such a small proportion of the total agricultural output. He goes on to suggest that landless labourarers should be placed in a position where their wages would give them an income that bring them above the poverty line instead of keeping their number at a level which keeps them perpetually below the poverty line.'

Prof. P. R. Brahmananda discusses the theme of rural wages. He is of the view that the rural areas may not be in a position to have significant industrial centres on a competitive basis if factory-type organisations are planned. But if the incremental wage payment for equivalent work is reckoned in terms of use of idle labour-time of self-employed and not full-time employed labour in rural areas.

the real wage equivalence difference will perhaps become a little more favourable to the rural areas. P. R. Dubhashi delineates on problems of rural development and focusses on the need for linking rural development with a vast network of rural institutions, including local government institutions, cooperatives, rural banks and so on. G. Thimmaiah discusses the topic of district level planning at length to bring home the plont that the science of its formulation and the art of its implementation need to be improved quite a lot.

Some other issues dealt with in the book pertain to areas like rural education, land reforms, technological changes, multinational corporations, infrastructural development, and so on. The editors in, in their preface, maintain that the fruits of development have not reached the urban and the rural poor, particularly those living below the poverty line. They quote from Myrdal's Asian Drama to substantiate their thesis. On the issue of IRDP they observe that it is an attempt to attack poverty, though the static growth of the rural areas and the worsening of poverty among the weaker sections have caused increasing concern among the social scientists, planners, administrators and policy-makers.

It would have been better if the editors of this volume had given a brief summary of what the contributors say in their respective essays. Also, there is no bibliography in the book

Incentives for reducing transmission losses

It has been decided to institute an Incentive Awar Scheme to help reduce transmission and distributio losses. In the current year, an amount of one cror rupees would be earmarked for giving incentives t Electricity Boards which bring about a substantia reduction in transmission losses and power thefts.

In case the incentive scheme contributed in bringing about better results, the Ministry of Power woul be prepared to not only double the amount of incentive award but even increase it fourfold.

The transmission and distribution losses are matter of grave concern. The transmission losses ar not entirely because of technological factor but als on account of theft of electricity.

In 1985-86, the total electricity generated in th country was 170 billion units. With one per cen reduction in the transmission and distribution loses the saving would amount to Rs. 78 crore, beside making available 1572 million units of power t consumers. Among the basic steps to remove thes losses were the identification of weak areas, formulation of suitable steps to reduce these losses, installation of capacitators and use of transformers. □

Attention Readers!!!

Reserved for Readers

From November 1—15, 1986 issue of YOJANA, we will have a regular column "**Reserved for Readers**". We propose to present this column as a forum of views of our readers on current issues of public interest. We would also welcome genuine comments on the contents of the journal, not exceeding 200 words, by ORDINARY POST addressed to: Chief Editor, YOJANA, Room No. 508, Yojana Bhawan, Parliament Street, New Delhi-110001.

More assistance for rural housing

RURAL HOUSING is an integral part of the Minimum Needs Programme of the Government. During the Sixth Plan a scheme for Rural House Sites-cum-Construction Assistance was in operation as a part of the Minimum Needs Programme. The total number of landless families which were provided house sites under the Sixth Plan is estimated at 13.07 million. However, the analysis has revealed that there are still 0.72 million landless families to be provided with house sites. As regards construction assistance, 19 lakh families were assisted against the target of 36 lakh.

During the Seventh Plan the remaining 0.72 million landless families will be covered on a priority basis. For this a sum of Rs. 36 crore has been earmarked. Along with allotment of house sites, the scheme also provides assistance for construction. During the Plan, efforts would be made to provide construction assistance to those families already provided house sites. A target of 2.71 million families has been fixed for provision of construction assistance at a total cost of Rs. 541 crore. The amount of assistance per family has also been revised upwards : it is proposed to provide assistance to the extent of Rs. 500 per family for provision of developed house site of 100 sq. yards each, against the current provision of Rs. 250. Similarly, for construction assistance, it is proposed to increase the amount to Rs. 2000 per family against the provision of Rs. 500 at present.

Besides the provision of Rs. 577 crore made in the Plan for Rural Housing under Minimum Needs Programme, an amount of Rs. 240 crore would also be made available during the Seventh Plan from institutions like HUDCO and General Insurance Corporation. □

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Housing during Seventh Plan

IN FULFILLING THE BASIC NEEDS of the population, housing ranks next only to food and clothing in importance. According to the Seventh Plan document, the development of housing must enjoy high priority in a poor society like ours where housing amenities are far below the minimum standards that have been internationally accepted. The National Buildings Organisation (NBO) has estimated that in 1981 there was a shortage of around 21 million dwelling units which rose to 24.7 million units at the beginning of the Seventh Plan—18.8 million in rural areas and 5.9 million in urban areas. Apart from the existing backlog in housing, the increase in population between 1985–1990 would generate roughly an additional requirement of housing units to the extent of 16.2 million, of which 12.4 million will be in rural areas and 3.8 million in urban areas. Thus the magnitude of the housing problem is gigantic.

The document asserts that there is a need for radical orientation of all policies relating to housing. The most important among these are : the provision of finance for house construction on a large scale, development of suitable land sites in urban areas, provision of house sites in rural areas, developing and applying low-cost technology in house construction and policies relating to rent control.

While all sectors of the economy—the Government sector, the public sector, the cooperative sector and the household sector—would have to participate in housing activities in a coordinated manner, the major responsibility for house construction, according to the plan document, would have to be left to the private sector.

The document further says that the poorer sections of the society would need subsidization and also assistance in house construction from the public sector. In this context the role of the public sector should be three-fold : First to initiate steps to mobilise resources for the housing sector on an adequate scale; second to continue the efforts to provide subsidised housing to segments of the rural poor and to other economically weaker sections (EWS) of the community like slum dwellers and dock and plantation workers; and third to undertake land acquisition and development in urban areas and provide house sites in rural areas. □

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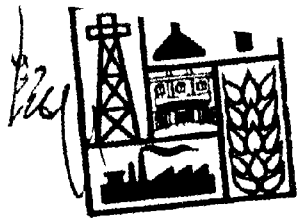
Spotlight on energy

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Nehru and planned development

NEXT ISSUE

Focus on irrigation

RENEWABLE ENERGY SOURCES TO GET BOOST

During the Sixth Plan, major initiatives were taken to develop new and renewable sources of energy. Some of the areas were bio-energy (biogas and biomass) solar and thermal energy, wind energy and solar photo-voltaics. The main objectives during the Seventh Plan are: (1) to encourage the development and accelerated utilisation of renewable energy sources, wherever they are technically and economically viable; (2) to improve the access to and availability of renewable decentralised energy sources particularly for the rural population, (3) to contribute towards balanced rural and urban development and development of backward, hilly and tribal areas by enabling the use of locally available decentralised renewable energy sources and to reduce environmental degradation resulting from deforestation. To achieve this end, intensive R & D has been proposed. The focus of R & D on renewable energy sources would be to organise a large scale end to end programme for design development, testing, demonstration and commercialisation of renewable energy technologies. It is proposed to overcome the problem of high cost of renewable energy systems through intensive efforts on technology development, materials and manufacturing innovation. Programmes such as cheaper models of biogas plants as well as community biogas plants, wind pump for irrigation, solar cookers, etc. would be promoted on a large scale for promoting renewable energy technologies for meeting energy needs of the disadvantaged sections of the population. Suitable infrastructure for manufacturing, installation and servicing of renewable energy systems are also contempleted in the Seventh Plan. ☐

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Nehru and planned development

R. S. Singh

It was Nehru who, says the author, initiated the process of planned development in India. He firmly believed, as a socialist, that the standard of living of the Indian masses could be raised only through large scale industrialisation and development of agriculture. To meet the resource gap in the plan, he accepted the inevitability of deficit financing and foreign assistance. The author feels Nehru adopted socialism and believed in non-violence as a policy but not as a creed. Because he did not mind exercising even coercion to achieve the goals of social and economic equalities through planning.

JAWAHARLAL NEHRU was neither a professional economist nor a professional planner. He was rather a student of science having interest in history and literature. But his deep involvement in the struggle for freedom gave him a vision of India to be built after Independence and as the country's Prime Minister for seventeen years, he was in a position to give them a practical shape. As such his economic ideas have to be looked at from what he wrote, spoke and executed for the upliftment of Indian masses after Independence as against the ideas he held before

Socialist in ideology

Jawaharlal Nehru did not believe in liberal school of economics although he was attached to the concept of liberty in politics He did neither sanction the theory of non-intervention nor the physiocratic school of economics. He was a strong believer in scientific socialism and thought that there was no alternative for man but to go in for socialism even to ensure his spiritual self-determination. He accepted Gandhian principle of non-violence as a policy and not as a creed and hence did not mind adopting socialism even by some measure of coercion to affect social and economic equalities through planning. Thus he accepted the necessity of economic planning of socialist pattern as the only way to bring a country like India on the road to the progress and prosperity.

To end poverty and unemployment

Nehru maintained that no ideology other than socialism could fit into the democratic pattern of social progress. To him, socialism was a cardinal doctrine for it was supposed to end poverty and unemployment of the Indian people. He rejected the doctrine of trusteeship as not being comfortable at all to the doctrine of socialism. He could not approve of the Gandhian stand on village self-sufficiency and small scale industries though he supported Khadi Programme during the freedom movement for political reasons. He was aware of the dangers of capitalism which promoted monopolies and vested interests leading to class conflicts most oftenly. He believed in big machines and large scale industrialization of the country, for he felt that only the application of science and technology could raise the living standards of our people. In his views, the problems of peasantry could also be better conceived and solved in a planned economy. He did not approve dependence on foreign aid or investments in his system but was eager to allow them a complementary role. He was of the view that economic growth could be well brought in by a solid indigenous base.

A practical socialist

His idea of scientific socialism having economic planning as the important organ, was not the result of a mere theoretical jargoning. It was based on a more conclusive experience. In 1927 and after he visited the Soviet Union and seeing the state of affairs there, he became a great admirer, for whatever the shortcomings of a one party regime may be, a backward country had made rapid progress through planning. It was different from the policies planned in the United States with the New Deal or in Britain with the Labour Party's outlines for future; it was planning within the capitalist framework. In Britain, it was the policy of nationalisation yet it did not necessarily mean socialism. France had many industries under the State but was not socialist. He favoured socialism for he knew that it meant a social and economic revolution very much needed in India, but he had to show that it was inevitable and so he first took up planning.

National Planning Committee

It was in 1938 that Nehru took initiative in suggesting the setting up of a National Planning Committee which was conceded by the then Congress President Subhas Chandra Bose who made Nehru Chairman of the Committee Eminent economists, scientists, financiers, industrialists, representatives of trade unions and of Village Industries Associations representing diverse interest groups had been appointed as members with K T Shah as Secretary. It had cooperation from the non-Cogress provincial governments, but the Government of India did not cooperate and it had no access to authoritative data. Thus, both the constitution of the Committee and conditions of the country did not permit planning for socialism. To Nehru, it soon became obvious that any comprehensive planning could take place only under a free national government strong and popular enough to be in a position to introduce fundamental changes in the social and economic structure.

However, the original idea of the Committee had been to further industrialisation without which the problem of poverty and unemployment as well as of national defence and of economic regeneration could not be solved. But no planning could ignore agriculture which was the mainstay of the people and the equally important social services. So Nehru had constituted sub-committees for agriculture, industry, labour and population, finance and commerce with which scholars and experts like M. N. Saha, Radha Kamal Mukherjee, Ambalal Sarabhai, Purushottam Das, Thakur Das, Guljari Lal Nanda were associated.

Though the Committee, due to exigencies of the situation, did not start with a well defined social theory, the objectives were clear enough and inspite of heavy odds, it carried on its work even during the war. But with the arrest of Jawahar Lal Nehru and several other members in 1942, its work came to a stop to be resumed only after their release. Its report could be published only after Independence making it a document of historical importance with its out-of-date figures.

Planning before Independence

In the pre-Independence days, there were others who had also pleaded for planning and had put forward their own proposals. In 1934, M. Visvesvarayya had published a ten-year plan 'Planned Economy for India', with the object of doubling the national income. In 1944, eight prominent Indian industrialists published 'A Brief Memorandum Outlining a Plan of Economic Development for India'. with the object of putting forward the general lines on which development should proceed and the demands which planning was likely to make on the country's resources The Indian Federation of Labour had prepared a 'Peoples Plan' and Shriman Narayan presented a 'Gandhian Plan'. Nehru was watching these developments carefully. however, none of them appeared to him suitable in the Indian conditions.

The Advisory Planning Board

When an interim government was formed with Jawaharlal Nehru as the Prime Minister, he lost no time in appointing an Advisory Planning Board under the Chairmanship of K. C. Niyogi. The task with the Board was to review the work that had been done in planning and to make recommendations for the future about the machinery for planning. It recommended the appointment of a single, compact and authoritative non-political advisory organisation for the purpose of planning. The stress was on the fact that only the government could take the final decisions.

Solomon Trone, an American engineer with experience of projects both under the Czarist and Soviet regimes and of economic development of Japan and Nationalist China, was Nehru's advisor for some time along with Gyanchand. These were the days when Nehru was working for the creation of a congenial atmosphere for preparing and introducing socialist plans. Trone recommended measures which amounted to socialist action laying emphasis on heavy industry, cooperative farming and mobilisation of resources. Among the proposals was a small committee of experts which would prepare a plan with the authority to implement.

Planning Commission

The Planning Commission was established by a resolution of the Government of India on March 15th, 1950, soon after India becahe a Republic. It was essentially an advisory body to make recommendations to the cabinet Nehru himself, as Prime

Minister, became its first ex-officio Chairman ensuring its close relationship with the cabinet and nominated G. L. Nanda as its first Deputy Chairman. Other memebers were V. T. Krishnamachari, C. D. Deshmukh, G. L. Mehta and R. K. Patil. Though the structure and composition of the planning did not remain the same during Nehru's life time and after, he always tried to maintain the spirit making it not a mere conventional institution but as an imperative. To ensure administrative coordination, cabinet secretary had been made its secretary and the National Development Council was to bring together the Planning Commission, the Union Government and the State Governments. The Commission was also made accountable to Parliament which votes the demands for expenditure on the Commission.

First Plan for socialistic pattern

When the first plan was announced, it was stated to be no plan at all, for the people who were enthusiastic about Planning were disappointed by the targets though not with the enunciation of the principles. It had given agriculture a top priority and accepted the projects for which preparations had been made. While introducing it in Parliament on December 15, 1952, Nehru defended the basic development strategy expounded therein and supported industrialisation of all kinds keeping in view income and employment generation as well as defence potentiality of the country. About the first plan priorities, he argued that strong agriculture will facilitate industrial progress and that "it was essential in a country like India at the present moment." He not merely thought of satisfying the immediate need for food but also of utilising food resources with foresight for future and for boosting export to pay for imports of heavy machinery.

During the first plan, the country experienced shortage of steel and other capital goods and Nehru had to seriously think of a socialist plan. He was not at all happy with the allocations and the size of the first plan which by any standard was moderate. In 1954 he visited China and in 1955 the Soviet Union apart from Poland and Yugoslavia. At the Avadi Session of the Congress, Nehru gave 'the socialistic pattern of society' as the goal of national economic policy which was subsequently carried on by Parliament. He maintained that full employment should be achieved in about ten years keeping in view the aims of achieving the objectives of a welfare state and socialist economy and ruled out the bald equalisation of the existing wealth, for, he maintained that first "we must produce wealth and then divide it equitably."

Second Plan for need-based planning

Second Plan was a first step towards total planning. Nehru called in P. C. Mahalnobis, who had a statistical and scientific view of planning, to prepare a framework for the plan. It was industry's turn to receive priority. It seemed practical with its emphasis on steel and machine-building industries and the extension of public sector to give it a dominant place in the economy to enable it to move according to the needs of the people at large and not according to the will of a section of the people interested in raising their profits. Nehru did not favour State capitalism....., but the compulsions of economy was that there must be centralised production of basic industries before decentralisation could be attempted.

Nehru supported the second plan's development strategy and stressed the need for planning in terms of physical requirements of the nation as finance, for him, was not so important. He said "if you are producing wealth, it does not matter very much if you have some deficit financing because you are equally putting money back through goods and services. Therefore, it does not matter how you manipulate your currency so long as your production is also keeping pace with it." For keeping inflation within control, he suggested that the gestation period in large scale investments could be counter-balanced by investments in cottage industries which should ultimately adopt modern methods as used in the West. But this did not mean that Nehru advocated for the wholesale import of western technology. Actually, what he meant was that small-scale industry should be self-dependent as well as new technology-oriented.

Village uplift and self help was his two basic tenets. He attached greater importance to community development programmes as an instrument of dynamic social change. For him, cooperative farming was the only way for Indian agriculture because only through this "the peasants would pool their resources by providing credit and for getting supplies of seeds, implements, fertilizers etc. and organise the sale of their produce." Nehru was firm on introducing his socialist views in the second plan with an eye on curbing the monopoly growth of private sector in the economy and the other on making the economy a self-reliant socialist order with equal opportunities for all along with a reasonable standard of life.

Third Plan for perspective planning

The emphasis on physical planning during the second plan had put India in inflationary situation and Nehru had to concede that both the physical and the financial aspects 'have to be considered'. At the time of formulation of the third plan, he put stress on perspective planning. When the Chinese aggression took place in 1962, Nehru held that war and development efforts are complementary and even stated that "85 per cent of the development plans are essentially a part of defence and even the

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Energy crisis and the way out

Dr. Balagopalan Unni

stry and the domestic sector, says the or, are the prime consumers of energy ur country. With more and more in-ialisation and increase in population, energy crisis looms large over India, h has only limited resources of non-nishable fuels. Hence the author cates for conservation, more effective of existing energy sources and quicker lopment of all renewable sources of gy. The government has taken positive s in this direction and the author feels these steps will certainly help find ion of the country's crucial energy lems.

ERGY PLAYS A VERY important role in the ny of our country. As the country is going ls more and more industrialization, the need se of energy also increases correspondingly to e the quality of life of its people. In India, 75 per cent of the population lives in 0.576 villages. More than 50 per cent of the popu- in villages and 40 per cent in urban areas low poverty line and in low income settlements. the energy for rural development becomes one more crucial issues, firewood is beginning to the mainstream of national and international ies and policies. The 75 per cent of the total tion uses firewood as fuel, of which 70 per cent energy requirements are met by firewood and agricultural wastes. It has been estimated that han 200 million tonnes of agricultural residues duced per year in India compared to 130 million tonnes of wood. Of this total agricultural residues, about 80 million tonnes, equivalent to 54 million tonnes of coal in energy content. The present requirement of wood in India is 2560 cubic metres, which will become 3000 cubic metres by 1990. It is assumed that by the end of the century, 2500 lakh more people will be unable to get firewood for their requirement of cooking.

The household sector is the largest consumer of energy accounting for about 50 per cent of the total energy consumption in India of the population of about 700 million; the number of households is approximately 110 million. With the population increasing every year, the number of household in the country is expected to increase to about 180 million by the turn of the century. Most of the energy used in this sector especially in the rural areas, is in the form of non-commercial energy comprising mainly of fuel wood and to some extent animal dung and agricultural wastes. The domestic sector constitutes an important consumer of both commercial and non-commercial energy. As far as commercial energy consumption is concerned, household sector constitutes about 13 per cent of the total commercial energy. The total domestic energy consumption was estimated to be about 31 lakhs kilo calories per household and 18 lakhs kilo calories per capita in the cultivator household and 89 lakh kilo calories and 18 lakhs kilo calories respectively in the non-cultivator housholds.

The energy crisis looms large today. This has attracted the attention of development planners, rural technologists, scientists and others to look for new sources of energy as well as to conserve and use the existing resources more efficiently. The major energy sources are coal, oil, natural gas, nuclear energy, solar energy, wind energy, bioenergy, chemical energy, and biothermal energy.

Oil

It is a versatile fuel which is used for a variety of purposes in all the sections of economy. The energy balance for vegetable oil production is positive. The use of some 60 lit. of sunflower oil as tractor fuel could result in the production of 1000 lit. of oil for fuel. As long as vegetable oil can only be used to replace 30 per cent or at best 50 per cent of diesel fuel, the oils are only extending the use of diesel oil. Oil is also an important raw material for production of petro chemicals. India is now self-sufficient to the extent of 70 per cent oil and the rest is imported. Additional oil resources were found and their exploitation resulted in the augmentation of indigenous production. The crude production was 30 million tonnes and the import of oil and petroleum products were 17 million tonnes in 1985-86. It is estimated to be 34.5 million tonnes (1989-90) and the import will amount to at least 26 million tonnes. According to the "Working Group on Energy Policy" the total oil product demand would increase to nearly 92 million tonnes by the year 2000 implying a growth rate of about 6 per cent. The 7th Five Year Plan outlay for the petroleum sector is Rs. 12,800 crores, and the cumulative output of oil between 1985—90 is expected to be 160 million tonnes against 103 million tonnes in 1980—85. The production of natural gas will be stepped up to 15 billions cubic metre by the end of the plan period from 7.2 billion cubic metre in 1984-85, an increase of over 100 per cent.

Coal

In India, immediately after the nationalization of the coking coal mines of various central and state agencies, the production of coal shot up from 77 million tonnes in 1973 to about 112 million tonnes in 1981. The share of a coal on the total commercial energy is about 66 per cent. In this sector, the Planning Commission has approved a target of 226 million tonnes against the projected demand of 237 million tonnes. The outlay for coal and lignite project is Rs. 7,400.5 crore during the current 7th Five-Year Plan period.

Nuclear energy

If the last two decades have been the decades of oil, the 1980s and the 1990s would be decades of nuclear energy. Currently, about 2.6 per cent of the electricity produced in the country is from nuclear source. The work on the design of a prototype fast breeder reactor with a power output of 500 MW is also being taken up and will be commissioned in mid 1990. The electricity generation from atomic power station by the end of 7th Five-Year Plan is expected to be 8000 million units per year. During 1985-86, the three atomic power stations at Tarapur, Rajasthan and Madras together were targeted to generate 3000 million units of electricity. The allocation of Rs. 34,000 crores in the 7th Five-Year Plan for the power sector would make it possible to add only 22,000 MW of new capacity as against an increase in demand of 30,000 MW.

Dr. Homi Bhabha's dream of making India self-reliant in all fields of nuclear technology may attain reality.

Alternatives to conventional resources

The human race faces one of the most colossal tasks ever known in the history of this world. This momentous task is all the more crucial for countries like India which have limited resources of non-replenishable fuels. In the light of prevailing circumstances India's position becomes quite uncertain. The alternative resources in India can be harnessed successfully to meet future eventualities. It is speculated that India could meet up to 20 per cent of its total energy needs through renewable resources by the turn of the century.

Solar Energy

The sun is essentially an infinite source of energy which can be harnessed with minimum detrimental effects on the environment. The average solar heat received by the earth is at a rate of 1.353 KW|m² by a perpendicular surface, and the peak power available at sea level is approximately 10 KW|m².

The Government of India is setting up a solar thermal energy centre for large scale prototype development, demonstration and commercialization. In the areas of solar thermal technologies, activities would cover applications, such as water and space heatings, refrigeration, airconditioning, crop drying, desalination, pumping and decentralized power generation etc. 165 solar water heating system with a total capacity of 6,14,350 L|day and approximately 12,283 M² collectors have been installed so far. With the solar energy projects installed so far, the country is saving 200 million KW of heat energy every year.

Biomass

It is important to note that per capita energy use is the lowest in India with 66 per cent of it coming from renewable carbon sources in the form of fuel wood, crop residues and animal dung. It is estimated that about 100 crore tonnes of fresh dung is available in the country, and 67.1 M³ of gas per tonne of wet dung can be produced. A subsidy of Rs. 11 crore was provided for this scheme during 1984-85.

With the launching of the national project for Biogas development in 1981-82, considerable impetus has been given to the development of biogas technology and biogas expansion in India. It has been projected that with full scale adoption of biogas technology by 2000 AD, almost 30 per cent of the rural energy requirements in the domestic sector (accounting for about 45 per cent of the total energy consumption in India presently) could be met.

An outlay of Rs. 520 crores was made available to the Department of Nonconventional Energy Sources in the 7th Five-Year Plan. According to the Department of Nonconventional Energy Sources, setting up of 1.5 million family sized biogas plants which can yield enough gas to save 6.3 million tonnes of wood and 30 million tonnes of good quality manure, will cost about Rs. 1200 crore.

Other sources of energy

Geothermal and tidal energy : Geothermal energy is related to the heat content of earth's surface by the presence of volcanoes, geysers fumaroles and hot springs. In India, the occurrence of over 250 hot springs have been recorded. The authorities have reported the completion of 11 geothermal wells to an aggregate depth of 580 metres and yielding 100 tonnes of steam and water per hour at a maximum pressure of 4.5 kg/cm² and a maximum temperature of 140°C. The possible sites of tidal power generation in India are Gulf of Cambay, Gulf of Kutch and Diamond Harbour (Calcutta) etc.

Wind energy . Wind power is a cheap non-conventional energy resource for rural India. The central problem in wind energy utilization is to establish a dependable supply system capable of converting the relevant demand at any time. For farmers engaged in small scale lift irrigation on areas of upto 1 ha (2.5 acres), CWD wind pumps are economically more attractive than diesel pumps if the average wind speed during the irrigation season exceeds 3.5 m/s (7.8 m ph). Achheya, a village in U.P. uses wind mills to irrigate the fields of about 853 acres for cultivation. This village is a new model of rural development through renewable resources.

During the 7th Five-Year Plan, the domestic supply and demand gap in oil will widen sharply, leading to the substantial increase in the import bill which the country can ill efford. But the case for a determined thrust in renewable sources does not rest on this alone. If India makes a series of commitments to conservation, it might save about 25 per cent of energy and still achieve some or high rate of economic growth resulting in the saving of fuels. Government of India has given top priority to the field of energy. An "Energy Development Council" was set up for the purpose of co-ordinating all the activities on the power front, from installation of equipments to generation and distribution. An Indira Gandhi award "Surya Putra" and "Pavan Putra" were being installed for breakthrough in solar and wind energy.

The Union Cabinet has approved an outlay of Rs. 55,000 crore for the entire energy sector for the 7th Five-Year Plan period. This amount constitutes roughly 30 per cent of the total plan allocations. The various steps taken by the Government in this field will certainly find a new era solving our country's crucial energy problems. □

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remaining 15 per cent are indirectly concerned with it". He commended the Village Voluntary Force Scheme to accelerate both development and war efforts.

Democracy and Socialism

While evaluating the performance of these plans, one is ought to take into account two essential basis of planning, i.e., democratic system and individual liberty. Nehru was of the view that it was not enough to create material resources alone, rather creative capacity in men along with entrepreneurial ability to start new industries should also grow. As such, the efforts Nehru made for coordination between democracy and socialism is accepted as a great experiment in the world history. It was perhaps the only ground why Nehru could not get support from the socialists and communists in India and was opposed vehemently by the right reactionaries. It is only a matter of guess what would have been the picture of Indian society if Nehru could get support from all corners.

Thus it was Nehru who initiated the process of planning in India both in theory and practice and put India on the road to development and modernisation. Being a socialist and a believer in planning, he was never an orthodox Marxist. Rather he had combined in him the rare qualities of Marxism, Febianism and Gandhism. To him, raising the level of income and, hence, standard of living of the Indian masses was important and could be possible only through large scale industrialization along with agricultural and overall development in a way that could provide increased opportunities for employment and enhance productivity. Defence seemed to be his important concern in the later days which he thought could be promoted by building up of capital goods sector. To meet the resource gap in the plan, he accepted the inevitability of deficit financing and the supplementarity of foreign economic assistance and emphasised the need for continuing planning process for nation's upliftment and welfare of the people, for he knew that majority of the people were still unaware of the gains of development for whom much was needed to be done. But he was all optimistic and had a faith in the people's ability to solve their problems. □

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Centre's share in power generation up

The share of Central sector in total power generation will increase in the Seventh Plan as it will be contributing about 50 per cent of the total addition in thermal generation. At present, the Central sector share comes to about 20 per cent in the total power generated in the country. □

Renewable energy, our future mainstay!

G. Srinivasan

Fossil sources of energy have taken about 350 million years to accumulate and are finite and non-replenishable. The generations to come, the author says, have a stake in these natural assets. That is why the Seventh Five Year Plan lays emphasis on accelerated utilisation of renewable sources of energy. These include fuelwood, biogas, biomass, solar and wind sources. The author here feels it is high time that a large scale programme of renewable energy development along with newer technologies for their efficient utilisation was chalked out and implemented because in the years to come the country may have to rely more and more on renewable energy sources.

IN THE PROCESS of planned economic development and in ameliorating the lot of the vast majority of our population—both rural and urban, the need for energy can hardly be over emphasised. While commercial energy accounts for a little over half of the total energy used in the country, the rest is coming from non-commercial sources like cowdung, fuelwood and agricultural waste. Though the share of these non-commercial sources has been coming down, in absolute terms, consumption has increased from around 126 million tonnes of coal replacement (MTCR) in 1953 to 250 MTCR in 1980. These renewable, non-commercial sources have been used extensively for hundreds of years but in a primitive and inefficient way. The indiscriminate use of non-commercial energy sources is leading to an energy crisis in the rural areas.

Why judicious use?

It should be kept in view that the fossil sources of enegy that have sedulously been replacing the traditional base of biomass over the years are finite and non-replenishable and the value that can be derived from these sources in the long run will depend upon the extent to which the country can manage their utilisation prudently. These natural resources have taken about 350 million years to accumulate and the generations to come also have a stake on these assets. The partaking of this precious heritage with posterity may not be possible if the unplanned and unconscionable use of these resources persist unchecked. It needs to be pointed out that it is not fossil fuels alone which are being used up at a faster clip. It is a matter of profound anguish that the country's verdant forest cover is also being annihilated at the rate of four lakh hectares annually which means added monotony for millions who garner firewood everyday for cooking their food. As such the question of meeting the fuel wood requirements of the rural people without shattering the ecological balance has to be tackled on a priority basis. Underlining the utmost importance of bringing about the development and accelerated utilisation of renewable energy sources, the Seventh Plan (1985—90) in its weighty document listed out the following fields for areas of action :

Fuel wood

India has a total forest area of about 75 million hectares which forms about 22.8 per cent of the total geographical area. The aggregate availability of fuel wood according to the Report of the Fuel Wood Committee (1982) is at present about 50 million tonnes, which the Committee has found would only meet less than half of the actual requirements. The Committee wisely warned that if the existing trend persists, the

fuel wood for cooking will become the greater constraint than the availability of food itself. As such, social forestry needs to be given proper importance. There is scope for planting perennial tree and fodder crops on marginal private lands that are now being cultivated for meagre yields of gram. While attempts to enhance production of tree and fodder crops are welcome, highest priority should be given to more efficient use of fuelwood for domestic cooking. It is gratifying that the National Project on Development of Improved Chulhas (NPDIC) was launched in December 1983 and within the short span of fifteen months, 8.12 lakh number of improved chulhas were installed by March 1985 against a target of five lakh numbers. For the year 1985-86, a target of installation of five lakh number of chulhas was initially kept. Against this 11.22 lakh number of chulhas have been installed in the year 1985-86. The total number of chulhas installed in the country stands at 20 lakhs. An improved chulha is estimated to save 8.40 kilogram of firewood per annum. Accordingly, it is estimated that an annual saving of 16 lakh tonnes of firewood valued at Rs. 64 crores is being achieved through these improved chulhas. The programme has also facilitated in stemming the trend of felling of trees indiscriminately.

Agricultural wastes

The availability of agricultural wastes depends on the extent of area and production of different crops. Though agro residue got mostly utilised as fodder or edible animal feed and generally do not pose any environmental threat, the intensive cultivation of paddy in recent years in some States has raised concern. The Department of Non-Conventional Energy Sources (DNES) is taking up programmes for controlled utilisation of paddy residues through fluidised bed combustion which will not only spread combustion period to almost 12 months, but will also attain complete and smoke-free combustion through specialised technology. Thus, energy recovery from agro residues would lead to prevention of air pollution too.

Biogas

Biogas is a clean and inexpensive fuel in the form of gas. It contains 55 to 70 per cent methane which is inflammable. It is produced from cattle dung in a 'biogas plant', commonly known as "gobar gas plant" through a process called 'digestion'. Animal dung forms 15 per cent of the total energy consumption in the rural sector. It is claimed that the manurial value of the dung is not diminished in the digestion process. In 1985-86 alone, over 1.95 lakh biogas plants were set up in the country against the target of 1.50 lakh plants. It is estimated that one biogas plant of an average capacity of 4 cu.m. gas production costing about Rs. 6000 produces 1200 cubic metres of gas per annum equivalent to 4.16 tonnes of firewood valued at Rs. 1664 and 12 tonnes enriched manure per year valued at Rs. 1656. A total of over six lakh biogas plants were set up in the country since 1974-75.

Assuming that 85 per cent of these plants are operational at a time, these plants are estimated to produce 612 million cu.m. biogas annually, equivalent to 212 lakh tonnes of firewood valued at Rs. 85 crores. Besides these plants are estimated to produce 102 lakh tonnes of enriched good quality manure per annum containing 2.04 lakh tonnes of NPK valued at Rs. 84.45 crores.

The Union Advisory Board on Energy has said the future development of biogas should continue to be based on a multi-design approach and there should be a continuing mechanism for the introduction and evaluation of new and improved designs. Urban liquid wastes, that is, municipal sewage can be anaerobically fermented to yield biogas for meeting both domestic and industrial needs. Human waste is virtually unutilised and this could be processed in areas where sewage treatment facilities do not present to yield energy.

Biomass

This, in its variegated forms, is a potential source of renewable energy for use as solid, liquid and gaseous fuel. It offers an important alternative to provide substitutes to petroleum products. All biomass can be used as fuel by direct combustion or after being subjected to biological or thermal processing. This is done to reduce its moisture content, increase calorific value and improve ease of handling. With the increasing demand for fuelwood, food, fodder and fertilizers, the national strategy has to be to develop the waste and degraded lands for fooder and energy plantations. The DNES has launched a programme in this direction and plantation of several quick growing species have been set up in several States. Woody biomass in these plantations would help to meet not only the local needs of the domestic sector but also provide feeder for the gasifers and power generation programme. The major areas of R & D in the woody biomass programme should be screening of species and selection at varietal and sub-varietal levels and identifying of conditions under which short rotation plantations could be successfully established.

Solar & wind sources

Large scale power generation through thermal (coal-based), hydel or nuclear sources, though indispensable for industry, does bring in its train associated pollution problems. The DNES is taking up setting up of demonstration and pilot plants for power generation in the megawatt range based on solar and wind energies which are totally free of pollution. Solar thermal power plants of 10—30 MW capacity, are being planned in Rajasthan and Punjab. A small plant of 25 KW capacity is nearing completion at

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Harnessing the huge hydel potential

N. D. Batra

Power is the main constraint in the industrial development of the country. Considering the power needs of the country, it is a pity that the enormous hydro-electric potential spread all over the country still remains unexploited to the full. Availability of cheap power will give the needed fillip to many industries. The author suggests that the centre and states should complement and supplement the various hydel projects so that power generation is stepped up.

POWER GENERATION IN INDIA SINCE Independence has been one of the fastgrowing industries. During the past three decades, the installed capacity of 2,300 MW in 1951 grew 14-fold and the number of electricity consumers increased from 1.5 million to 30 million, benefiting a much wider cross-section of society. At present not only all urban areas but also 42 per cent of rural regions and 62 per cent of rural population, have access to electricity.

Unsatisfactory development

The thermal plants are, by and large, the back-bone of the power industry in India, accounting for 62 per cent of the installed capacity. Besides the contribution of nuclear plants with a total capacity of 860 MW is only 3 per cent. But thermal plants are plagued by a plethora of problems, the chief being the problem of low capacity utilisation and reliable operations. There are frequent break-downs and load-shedding causing loss of industrial and agricultural production. Shortage of poor quality of coal and railway wagons, inadequate management and maintenance, machinery defects and labour problems, are some of the other reasons put forward to explain the dismal situation. More importantly, the increasing price of petroleum to be paid for in foreign exchange is crippling the country's economy and the excessive dependence on thermal generation would lead to rapid depletion of coal reserves. As a result, load-shedding has become a national disease and termporary improvement in power supply is no solution. What is required is an uninterrupted power supply that could meet the growing demand. In any satisfactory power development, there should be a balanced mix of both hydel and thermal power fed through an integrated transmission network. Development of hydel and thermal power in the proporation of 64:40 or even 70:30 is considered adequate to take care of any situation arising from bad monsoon.

Untapped potential

The total estimated hydro-power resources of India is placed at 41 million MW with an annual assured energy potential of 216,000 million KWh. Of this potential only 8 per cent is utilised It is fortunate that the major areas of agricultural and industrial development in the country lie within a radius of 500 kms from the main sources of hydro power. An important fact emerging form the location of India's power resources is that coal deposits are concentrated mostly in the Bengal-Bihar region while hydel resources are spread practically all over the country. This in itself is sufficient argument for stepping up our investment in generation of hydel power. The total hydro-power potential in the world is estimated as $23{,}000 \times 10^9$ KWh per annual or equivalent to 4,200 million KW. India's potential is 1 per cent of this. It is interesting to point that in the highly industrialised countries like USA, USSR,

Canada, Japan, France, Sweden and Norway hydro-power is nearly fully devoloped.

Among the rivers in India whose potential for hydel power can be exploited or is being exploited, are the Chenab, the Beas and the Sutlej, the Jhelum, the Ganga basin, Chambal, some of the tributaries, the Barak and the Manipur rivers in the Manipur State, the Sabarmati, Mahi, Narmada, Tapi, Subrnarekha, the Brahmani, Mahanadi, the Godawari, the Krishna with its tributaries, the Cauvery basin and Sharavati. The hydro potential of the 14 major river basin is estimated to amount to 36 million KW at 60 per cent of load factor of 190,000 million KWh annually. Of these, the steep courses of the west flowing rivers on the western face of the Western Ghats offer possibilities for highly economic, high-head hydro-electric development. Similarly, the major rivers south of Goa are believed to be capable of exploitation for hydel power generation. Powers possibilities from the medium and minor river basins on the eastern side are not supposed to be encouraging. It has been estimated that the total hydro-electric potential of India's river basins which are commercialy exploitable is 50 million KW at 60 per cent load factor. According to Dr. K. L. Rao : "Of the country's total power potential, about a quarter represents the potential of the 'run-of-the-river' type projects and the rest depend on storages. Considering the head exploited, high-head projects of over 300 m. account for a third, low-head projects of 50 m. and less from 7 per cent and the rest 60 per cent or medium-type head projects. It is interesting to note that Brahmaputra has the highest hydro power potential and nearly 30 per cent of the country's total. The Indus has 7 m. KW and Ganga and Godawari 5 and 7 m. KW, respectively.

Happily hydel power is the cheapest source of electricity compared to thermal power based on coal or atomic power. The initial costs of a hydro project may be slightly higher but the recurring costs are so moderate that the generation of hydro power has proved to be the cheapest However, hydel power is dependent on the monsoon which can be sometimes very unpredictable. We have had the experience of 1972-73 when monsoon failed in large parts of the country and the power position became very difficult. In a situation of this kind which can occur any time, the worst effects of drought could be, to some extent, mitigated if we have large net-work of thermal stations, as well.

N-E hydel potential

The north-eastern region has the richest hydro-electric potential in the country. Studies made by the Central Power and Power Commission show that 12,500 MW of power at 60 per cent load factor can easily be generated in the region. Apart from the Brahmaputra and its tributaries which have the biggest potential, rivers in Mizoram and Meghalaya can also be usefully harnessed. The North-Eastern Electric Power Corporation is already executing the first major hydel project of the region in the North Cachar hills of Assam. The project, known as Kopili hydro-electric project, consists of two units of 25 MW and two units of 50 MW each in the first stage. Similarlv the North-Eastern Electric Power Corporation (NEEPCO) a Government of India enterprise, would be commissioning the first unit well within seven years—the criteria fixed for completing hydel projects. But the NEEPCO feels that it would be beyond the capacity of his organisation to take up the execution of all the projects. Others agencies would also have to come in. The suggestion for handing over some of these projects to foreign firms for turnkey execution to speed up the development of hydro-electric projects is also welcomed. This is all the more necessary because the main constraint is power in the industrial development of the country in particular and the North-Eastern region in general, in the coming years.

NEEPCO

As for NEEPCO, it has gained enough confidence by training totally available personnel in all fields of engineering to take up bigger projects. It proposes to take up the execution of 105-MW Doyang project in Nagaland and 600-MW Kameng project in Arunachal in the near future. Both these projects have been cleared by the Central Electricity Authority. The NEEPCO is also investigating Ranganadi project (500 MW), Pappu (80 MW) and Damwe (400) in Arunachal. All these projects to tap the potential of the Brahmaputra and its tributaries will be located in the dense forest areas with difficult communication facilities. These would be completed by 1992 if availability of funds did not pose a constraint.

As for the Kopili project, it consists of two projects. There would be two dams of 60.76 metres and 25 metres in height and 263.65 metres and 202.70 metres in length respectively; two tunnels of 5.7 km and 2.5 km in length and two reservoirs with water storage capacity of 10,500 acre feet and 45,000 acre feet respectively. There would also be two power houses, one for two units of 25 MW each and other for two units of 50 MW. Both the tunnels of the project have been completed and concrete lining of the tunnels is proceeding as per schedule. The erection work on both the 25 MW units of the first power house is also going on side by side as per schedule. The required transmission lines are also under construction. Meanwhile, NEEPCO proposes to increase the generation capacity from 150 MW in the first stage to 300 MW in the second stage to take full advantage of water available and the already built civil works. The capital cost of such an increase would be about one-third

of the stage I cost of Rs. 149 crore. The second stage of 150 MW would be completed in a much shorter period.

What can be done ?

It is a pity that the power potential of the north-eastern states has not been fully exploited. This is partly due to the difficult terrain and partly to lack of adequate demand from industrial and other users. Considering the power needs of the country and the plentiful energy resources that the region has, there is no reason why this state of affairs should continue. The power potential can be fully exploited and the surplus electricity generated can be used by other states. Moreover, most of the states in the region are under-developed and lack of infrastructure facilities is one of the major factors responsible for the backwardness. Availability of cheap power may give the needed push to many industries for which there is good scope. The region is rich in forest resources; tea, jute, limestone and hydro-carbons. Even if the state cannot absorb the power generated, there is no justification for allowing the hydel assets to go waste. Hydel power is one of the best renewable source of energy. Except for the initial capital investment generation cost is low. Keeping this in view it would be worthwhile asking the National Hydro Electric Power Corporation and other agencies engaged in power projects to have a shelf of project reports ready so that new hydel projects can be taken up on a planned basis.

Need for central aid

Gestation period of a power project is long and requires large capital outlay. A period of five years is normal in the present circumstances to complete a thermal power station. But for a hydel project anything from seven years upwards is not unusual. It is here that the Centre must come forward to supplement the limited resources of the State and the State must make funds available to the Board either as loan or grant particularly through the North-Eastern Council. In case the assistance is given as loan the condition should be that no interest is charged to the Board till the project is commissioned and only then repayment of principal and interest would be asked for. Any outlay on power generation must indeed be taken as an investment for growth like investment on road constructions. Indirect benefits from growth will far out-weigh the initial investment on power. This is all the more necessary in the North-Eastern Region with large potential for growth still remaining untapped and the region sadly lagging behind the rest of the country.

The North-Eastern Region is a store-house of fantastic hydro-electric potential not only in the country but also in the world. The great natural resource of this remote region is not oil or tea but water, the region being blessed with two unique river basins namely the Brahmaputra Basin and the Barak Basin. There can be no better alternative source of energy than the available hydro-electric resources, ever replenished by nature, devoid of pollution and unaffected by inflation ! □

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(contd. from page 11)

Salojipally in Andhra Pradesh, a plant of capacity 50 KW is to be installed at village Achheja and another of capacity 50 KW at the Solar Energy Centre in Gwal Pahari, Gurgaon district in Haryana. The scope of harnessing wind energy, particularly in the coastal regions, is far greater and so far 2.5 MW is being generated at five recently completed wind farms.

In sum, the planners and energy users in the country should think anew about the entire approach to renewable energy development. We have plunged headlong in some areas like biogas, while in other areas like solar, wind, and waste processing we have yet to make a major mark. Efforts in this direction have so far been sporadic, through the Seventh Plan document claims of a "directional emphasis" towards renewable sources of energy. A large-scale programme of extension, education and creation of responsibility has to be chalked out, alongside the building up of infrastructure. Since renewable energy has so far been used in traditional ways, awareness has to be promoted concerning newer technologies which offer more efficient ways of utilising renewable energy sources. Though these sources of renewable energy contribute only marginally to the overall energy supplies in the country, ways and means have to be found to take full advantage of specific location and load characteristics so as to make them viable too. Over the years, however, the country may have to rely more and more on renewable sources if an initial movement on the road towards self-sustainability in energy needs is to be made.

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Coffee exports up

In the first three months of the current financial year, exports of coffee have risen to Rs. 99.34 crore. This is 35.97 per cent higher than exports in the same period (April—June) last year, which had amounted to Rs. 63.37 crore.

Coffee has been exported to the quota countries member countries of the International Coffee Organisation, including the United States, Japan, Britain, the Federal Republic of Germany, France, Canada, Switzerland and Singapore, Among the non-quota countries, the Soviet Union continues to be the main buyer, with exports in smaller quantities being made also to China, Poland, Maldives, Kuwait and Malaysia.

Power generation the biomass way

Dr. D. K. Dixit

Biomass, says the author is a promising source of alternate energy, particularly in a country like India where plant life and agricultural residues are available in abundance. Full development of this source of energy can vastly improve the quality of life in rural India and also provide employment opportunities. Biomass gasifier and gasifier engine systems represent the kind of decentralised technology that needs to be developed, promoted on a large scale. With energy crisis looming large, biomass is indeed a veritable boon.

DEPLETING CONVENTIONAL ENERGY sources like coal and oil and their escalating costs, coupled with problems of pollution, have necessitated a fresh look at alternatives. Biomass has recently attracted the attention of energy planners as a promising source The term 'biomass' includes all plant life, trees, agricultural plants, bush, grass and algae. Thus it may be obtained from forests in a planned or unplanned fashion or from agricultural lands. By extension, the term is also understood to include livestock droppings since these are derived from plant tissues. The entire organic content of biomass can be converted into available forms of energy. The most obvious example is firewood which is still one of the most widely used fuels in our country.

Every year, plant photosynthesis converts about 200 billion tonnes of carbon into terrestrial and aquatic biomass with an energy content of 3,000 billion giga joules--which is about 10 times the total energy being presently consumed in the world annually. Yet today, only one-seventh of the world's total energy comes from biomass use. A large and potential renewable resource is thus left largely untapped. In India the annual biomass availability is estimated to be over 200 million tonnes from agricultural residues alone.

Using biomass

Utilisation of biomass as a source of energy essentially involves either direct combustion (i.e., boilers, furnaces, cooking stoves, etc.) or its utilisation via the gasification route. For biomass to be able to substitute or supplement conventional fossil fuels, the latter route is much more appropriate. "The two major categories of applications are motive power production and thermal applications," says Dr. (Ms.) P. P. Parikh of I.I.T Bombay, who is chairman of the Biomass Gasification Expert Panel, Department of Non-conventional Energy Sources. "Under the former comes the internal combustion (IC) engines, a single class of machines responsible for a significant fraction of total consumption of petroleum products; while thermal applications include boilers, furnaces, kilns, etc. Biomass utilisation for either of these major applications calls for conversion of biomass into an adaptable fuel as a first step. It is here that biomass gasification fills the bill."

Gasification of biomass can be effected in two ways. One is bio-degradation of biomass under aerobic conditions to obtain biogas, the gaseous fuel whose combustible constituent is methane. The second gasification route is through thermo-chemical conversion processing, generating producer gas which contains carbon monoxide and hydrogen as the combustible ingredients. Biogas is a medium caloric gas (calorific value of 4,500—5,000 kcal/nm^3) whereas producer gas is a low calorie gas (having calorific value of 100—1,100 kcal/nm^3).

A firm in Baroda engaged in research in the field of renewable energy sources, has recently developed a biomass-based gasifier-engine system which comprises four major components—a producer gas reactor, a gas cleaner and cooler, a fuel mixer and an engine. Raw material (waste biomass such as wood-chips from timber depots and saw mills, twigs from plantations and agricultural residue like cotton stalk and rice straw) is introduced in the cylindrical reactor along with air for partial (incomplete) combustion from the top and the gas extracted from the middle.

The gasifier

There are three zones in the gasifier. In the topmost zone, dehumidification occurs ; in the middle zone, pyrolysis and producer gas production takes place and the third or bottom-most ceramic-lined zone is the hot combustion area. The producer gas emanating from the reactor is hot at (300-400°C) and dirty with soot, tar vapours and other pollutants. It is passed through a charcoal bed against a counter-current of cold water for scrubbing and cooling it.

It is important to bring down the gas temperature to near atmospheric conditions to ensure specified volumetric efficiency of the engine. The gas is further filtered and dried by passing it through a cotton bed. In case of non-availability of continuous supply of cooling water, air cooling is resorted to alongwith removal of tar by condensation and removal of soot and ash by centrifugal separation techniques.

The clean, cooled, dry producer gas can now be used as fuel either in a special engine or in a conventional IC engine alongwith diesel or petrol. In the first case, air and clean gas are mixed together in proper proportion in a specially designed mixer before they enter the engine. In the latter case, carburettor modification is necessary to permit induction of the gas to mix with the fuel and air.

Besides, on an average, one kg. of wood produces 2.5 nm³ of producer gas and one kilowatt-hour of shaft energy. Coupled to a diesel engine, the biomass gasifier can result in as much as 80 per cent saving of diesel. Incidentally, a speed governor fitted to the gasifier-engine maintains steady shaft speed of 1,000|1,500 rpm (revolutions per minute) despite load fluctuations and gas supply disturbances which makes the system ideal for power generation as the system can be directly coupled to a DC (direct current) generator or an alternator.

Research is also under way to develop concentrated biomass fuel in the form of pellets. Finer agro-wastes like paddy husk and saw dust can be made into briquettes to enable them to be used in the gasifiers.

Its application

There are two potentially very attractive areas of application, viz., irrigation water pumping, where currently diesel pump sets are employed, and indu trial applications—both in conjunction with dies generating sets and also for direct thermal appli tions. Such diesel pump sets number 3.5 millio while diesel generating sets already have an install capacity of a few hundred megawatts in the countr The capital cost of the gasifier unit including insta lation and commissioning is estimated at abo Rs. 5,000 per kw. The use of biomass-based pr ducer gas as a supplementary fuel in existing dies engines when operated on dual-fuel mode appea attractive as a long-term strategy with high substit tion potential.

A new study entitled "Gasifiers : Fuel for Sie Economies", partly funded by the World Ban mentions Brazil and the Philippines as two cou tries that have taken the lead in this burgeonii technology. The study says that biomass gasifie are suited to rural electricity generation, irrigatic pumping, agricultural and forestry processing ar vehicle propulsion.

According to Dr. K. S. Rao, Director, Gujar Energy Development Agency (GEDA), "A farm needs about 10,000 units (Kwh) of electrical ener to irrigate 10 acres of land. This energy can l generated through a gasifier engine unit from abo 15 tonnes of wood. If a farmer raises plants f energy in five per cent of his land (half an acre he can easily produce the necessary wood f running his gasifier engine. In fact, in view of tl availability of large quantities of agricultural re dues, a reliable gasifier-engine suitable for agric tural operations, which can run with these agr wastes and biomass fuel, can and should be dev loped on a priority basis."

GEDA has recently sponsored two demonstratic projects in the state based on biomass gasifie One project envisages six 100 kw gasifier pow generation units to be set up in different regio of Gujarat. The raw material will be wood chi from timber depots, twigs from eucalyptus plant tions, agricultural residues and timber from ener plantations. Three of these units will be coupl to the electricity grid. The second pilot proje proposes to use cotton stalk for gasification and tl gas is to be used for power generation and providi hot water for the Ahmedabad dairy. The propo visualises 200 kw power generation and recove of thermal energy of 10 million BTU per hour.

For power generatio

Also two plants of one megawatt capacity eac costing about Rs one crore, have been planned Bhavnagar and Rajkot in Saurashtra. The electric produced by these plants using the gasifier syst will be sold to the Gujarat Flectricity Board Rs. 1.25 per unit for distribution. Says Dr. V. Patel, who is said to get the highest yields eucalyptus in India on his farm near Bhavnagar a

who is a firm proponent of energy plantations, "The Bhavnagar project will be a veritable boon to wood producers for whom such a plant—with an expected return of 20 per cent—will fetch lucrative prices."

Apart from wood power, a groundnut oil mill in Rajkot is being approached for installing the other one MW plant for producing electricity from groundnut husk. The mill at present burns husk to generate the steam needed to produce oil. It will sell husk at Rs. 150 per tonne and will, in turn, get the steam at 'normal price'. The power generated will be sold to the Gujarat Electricity Board (GEB).

"The cost of electricity generation from a gasifier system may work out to be higher by hundred per cent compared to the conventional generation," says P. J. Damy, executive director, GEB. "But because of the lower capital cost and the possibility of the running cost coming down with design improvement, gasifier systems may prove to be cost-effective." Adds C. S. Parikh, additional chief engineer, GEB, "After a successful run of the proposed gasifier units in the GEB system, we might consider installing such units in hilly areas where transmission power lines are difficult to lay, or are more prone to interruptions."

Adoption by the States

The Nepanagar paper mill in Madhya Pradesh, having tonnes of waste wood which the state forest corporation does not permit to be sell, is also toying with the idea of going in for a trial biomass gasifier unit of 300 kw. The Madhya Pradesh Urja Vikas Nigam, has installed a five kw gasifier-cum-generator at its office for meeting its electricity needs. Besides, two 40 kw gasifier-cum-generators are being installed in Kondagaon in Bastar and Patthalgaon in Raigarh district to energise saw mills. A 25 MW project, based on wood-fired boilers, will also be set up to meet the energy needs of the backward area of Bastar.

Biomass-gasifier and gasifier-engine systems can vastly improve the quality of life in rural areas and provide opportunity for employment. They represent the kind of decentralised technology that needs to be developed, promoted and manufactured on a larger scale. Establishing test facilities for performance evaluation of such systems, and measures to standardise this nascent technology are also imperative. □

Intensive measures for Air pollution control

Fifty-nine air pollution monitoring stations have been set up in 16 towns of the country. These stations were installed by the National Environmental Engineering Research Institute (NEERI), Nagpur and the Central Pollution Prevention and Control Board in collaboration with State Pollution Prevention and Control Boards.

NEERI already has three monitoring stations each in Ahmedabad, Bombay, Calcutta, Cochin, Delhi, Hyderabad, Jaipur, Kanpur, Madras and Nagpur since 1978. These cities were selected for their close proximity to the zonal laboratories of NEERI as well as their being major urban localities representing varied topographical and meteorological conditions prevalent in the country.

The Central Board in collaboration with its State counterparts has set up 29 monitoring stations in seven cities. They have set up five stations each in Agra, Howrah, Kota and Delhi and three stations each in Anpara (UP), Haldia and Surat. These cities have been selected on the basis of population density as well as nature and extent of pollution, requiring immediate control measures.

Under the Seventh Five Year Plan the Pollution Control Boards will set up 24 monitoring stations in eight cities. Five stations each will be located in Baroda and Cochin, four in Pune, three each in Dhanbad and Hyderabad, two in Faridabad and one each in Goa and Pondicherry. These stations are in different stages of installation, many of which will become operative by the end of 1986.

Vehicular exhaust is the primary cause of air pollution in Indian cities, so much so that it accounts for 60 per cent air pollution in Bombay and 40 per cent in Delhi.

The Central Board has prescribed standards for motor vehicles exhaust and State Governments have been advised to effect suitable amendments in the Motor Vehicle Rules to enforce these standards. The Central Board itself proposes to incorporate the enabling provision in the Motor Vehicles Act, 1939 to authorise the Government to prescribe enforcement of these standards.

Emission from the industries is the second greatest pollutant. The Central Board has laid down emission standards for 12 major polluting industries viz. cement, thermal power, iron and steel, fertilizer plants (nitrogenous), nitric acid, sulphuric acid, calcium carbide, carbon black, fertilizer (phosphatic), oil refineries, aluminium and non-ferrous (copper, lead and zinc smelting). ☑

On conserving coa energ

Dr. D. N. Singh

India today faces grim energy crisis and adverse balance of payment situation because of heavy import of petrol and petroleum products. Hence the imperative of focussing atention on conservation of oil and coal says the author. He suggests a practical approach on conserving these two sources of energy. He feels a package of fiscal incentives, disincentives and punitivemeasures, esshould be evolved to promote energy conservation without any further loss of time.

Faced with the grim situation of acute energy crisis and adverse balance of payments caused by import of petrol and petroleum products, it has become imperative to focus attention on energy conservation. In India, the need for lesser dependence on oil and coal was recognised long ago as these would continue to be major sources of commercial energy even in the forseeable future. As such, the programme which envisages efficient utilisation of these two resources, with due regard to conservation, in all the consuming sectors of economy should receive highest priority.

Conserving Coal

To administer the provision of Coal Mines (Conservation and Development) Act, 1974, a Coal Conservation and Advisory Committee was constituted which is working since 1975. The term of reference of the Committee are :—

(a) To advise the Central Government regarding the formulation and implementation of a national policy in relation to the conse vation, development and scientific utilis tion of coal reserves.

(b) To recommend measures which should t taken for :—

(1) ensuring the conservation of co reserves,

(2) undertaking the development of the co mines in scientific manner,

(3) undertaking the research in relation conservation of coal, development of co mines and utilisation of coal.

The Committee normally meets twice a year.

With the above objectives, several steps ha been taken in the field and the important wo already covered in the area of conservation in Co India Ltd. comprises the following :

(i) Reconstruction|reorganisation of the min to minimise losses of coal in barrie followed by improvement in the degree recoveries through improved new mini technologies and stowing by inert materia

(ii) Recovery of coal standing in pillars.

(iii) Control of mine fires—A Plan deali with 70 major Jharia Coalfields fires ha been prepared by CEMPDIL. 13 fire pı jects covering 32 fires are in various stag of implementation. It is expected that t existing fires in Jharia Coalfield would controlled|extinguished by the end of t Eighth Plan period. Fires in other co field would also be dealt during t Seventh Plan.

(iv) Introduction of modern method of be ficiation to upgrade the quality as well fuller utilisation of different fractions inclu ing the coal fines.

(v) Briquetting and carbonisation.

The levy

A levy, collected under Section VI of the Act—Coal Mines Conservation and Development Act 1974, are applied for subsidy for conservation measures and protective works as also the subsidy of coal moved by rail-cum-sea route. It is also intended to utilise a part of the proceeds for the schemes for the development of roads in the coalfield areas of Dhanbad.

Strategy for optimum use

While the above action areas are in one way or the other under various stages of implementation, the following aspects would need greater attention during the Seventh Plan for the optimal use of coal on the users front :

(1) In many industries in the country, the energy consumption per unit of output is higher. Thus, it is possible that un-economic unit size and obsolete technology which contribute to high energy consumption may be modified appropriately by the major consuming sectors like power, steel, cement, etc. The proper modification in techniques and technologies should rely on indigenous quality of coal being available. While evaluating new technology, energy efficiency would have to be treated as one of the criteria.

(2) There is a growing complaints from the users against the quality of indigenous coal supplied. Such quality consciousness has projected the need of import of superior quality coal—coking for the steel sector and non-coking for the power industries. A study on improvement of the quality of coke-oven feeds in the steel plants, when imported coals are blended with available indigenous supply, needs greater stress. Further the blending of imported non-coking coal with the available non-coking coal in the power plant, must ascertain the degree in improvement in the performance of the power plants. Unless these studies are carried out to decipher the blending norms and consequent improvement in their performance, imports of coal would not lead to any long term solution for the consuming industries. In other words, the vagary of import would be playing a decisive role in the development of these sectors.

(3) An adoption of underground coal gasification to yield the heat from the coal which are difficult to mine due to their occurrence at deeper depth and due to adverse economics have been stressed in the Seventh Five Year Plan. This should be pursued more vigorously in order to trap these resources occurring at deeper depths which are not amenable to mine by conventional methods.

(4) Fluidised Bed Combustion Boilers Technology would need greater perfection for medium and high capacity energy generating boilers. This should help in using the coal which are inferior and or otherwise non-suitable for use in the conventional boilers either due to the high percentage of ash or due to occurrences of localised pockets of combustible material.

(5) Completion of experimental project on coal supply by slurry pipelines and the perfection of technology would yield a long-term solution for movement of coal to the consumers, specially power sectors.

(6) Preparation of master plan for all the coalfields and speedier exploration programmes. The exploration activities would be extended to delineate new areas and to demarcate lay and disposition of coal seams at deeper and various horizons. The conventional methods should be supplemented by new techniques like geo-physical survey, non-coring drilling, etc.

Evolving a pricing policy

A Fuel Efficiency Committee for the coal sector (similar to the Petroleum Conservation Research Association) has been set up under the Secretary, Department of Coal, associating the representatives from Department of Power, Steel, National Productivity Council, CFRI, DGTD, CIL and SCCL with the following terms of reference :

(i) To promote research and development in the utilisation of coal in the various sectors of industry.

(ii) To evaluate and encourage the fuel saving processes.

(iii) To conduct and promote studies in all spheres of coal usage.

(iv) To provide technical advisory services designed to achieve the greater economy or efficiency in coal utilisation.

(v) To aid and assist in training of personnel in fuel efficiency techniques and practices.

(vi) To assist research in other organisations engaged in studies for the better utilisation of coal.

In conjunction with the above, a motivation of energy consumption through fiscal measures are also warranted. Consequently, in consonance with the technological upgradation, an appropriate pricing policy would have to be evolved in order to induce economies in the use of energy in all sectors and the promotion of desired inter-fuel substitution. Differential pricing system in freight movement would also be desirable to attract a scope of inter-fuel substitution.

A package of fiscal incentives, dis-incentives and punitive measures should be evolved to promote energy conservation without any further loss of time Last, but by no means least, a cadre of energy efficiency specialist would provide more scope for conservation through advisory services to various industries which would evoke consciousness for energy conservation leading to energy-consumption interface research. □

Biogas, the benefactor !

M. K. Khan

S. K. Ghosh Dastidar

This is a study of the biogas programme as in operation in Karnataka and Maharashtra. Over 2,000 biogas plants in the two states were chosen for the study. Its revelations were quite interesting. For example, the two most important benefits of biogas are : saving of time and lesser dependence on conventional fuels like kerosene, firewood, cowdung cakes, twigs etc. It has also led to lesser exposure of women to smoke hazards like eye and respiratory ailments. As a result of this, more time was available with women to join cash earning activities or to devote more attention to family chores. In both the States official support for setting up biogas plants was found to be handy and quick.

BIO-GAS HAS LATELY RECEIVED considerable attention in the programme of development and utilization of non-conventional energy sources to combat the growing energy crisis particularly in rural areas. Among other things, the technology ensures (a) a cleaner and cheaper fuel for cooking and lighting, (b) rich organic manure, (c) health protection particularly to women who are exposed to smoke in the kitchen and (d) improved environmental sanitation. It has also been demonstrated that the system can be built to provide power for small scale productive operations. Recently the Department of Non-Conventional Energy Sources (DNES) has given new thrust to bio-gas programme under National Project on Bio-gas Development (NPBD) initiated in November 1981. The achievement of the progromme during NPBD period can be judged from the fact that while during the last 8 years of pre-NPBD period (1974—81), only 1,01,213 family plants were installed, in the 4 years of NPBD period, i.e., from 1981 to 1985 a total of 3,43,572 plants were installed, out of which 1,72,773 were installed in 1984-85 alone. This is an impressive achievement and indicates that the efforts put in by DNES have led to increasing acceptance of bio-gas technology in rural areas. Considering the quantum of cattle waste available in rural India and ever growing scarcity of other cooking fuels, in particular wood, all concerned should consolidate and concentrate their efforts to accelerate the pace of acceptance of bio-gas. It is, however, surprising that some people are doubting the utility of this decentralized source of energy which has already become popular in rural areas

Programme evaluation

The 1984-85 report of the Comptroller and Auditor General (CAG) on NPBD has brought out that, of the 3,55,000 plants installed, about 13,000 plants were misreported and 17,388 were lacking completion certificate. In some articles appearing in newspapers recently it was reported that NPBD programme missed the Sixth Plan target by 3 per cent. These observations have caused ripples among the masses as well as among those concerned with implementation of the programme in the field and questions are being raised about the functioning of the whole programme. The issue is perhaps not as serious as has been projected. Even if all the shortcomings of CAG report is accepted, it would apply to only 8 per cent of the total family plants installed during the entire Sixth Plan period. Further, as compared to other developmental programmes, the achievement of NPBD programme was not bad and its missing of Sixth Plan target by 3 per cent should not be considered as a serious lapse. Further, cases of misreporting and lack of completion certificate are not necessarily mutually exclusive and hence can't be added together. Indeed a recent evaluation

of bio-gas programme conducted by five independent research and consultancy organisations such as National Council of Applied Economic Research, Operations Research Group, Baroda, Kirloskar Consultants, Basant Raj Consultant, and Centre for Studies in Decentralised Industries have come out with the conclusion that the bio-gas programme was not doing too badly across the country. The evaluation carried out by these independent agencies is scientifically reliable as they had used appropriate sampling techniques for selecting sample of bio-gas plants and it covers all major states of the country. The total number of bio-gas plants covered was about 11,000 which is sufficiently large to give a fairly good idea about the functioning of the gio-gas plants. These studies indicate that a larger proportion (85 per cent) of plants installed during NPBD period were in working condition than those installed during pre-NPBD period (75 per cent). Further non-functioning of plants due to structural problems such as cracks in the digester or inlet|outlet pipe, sinking of base etc., was reported to be less (5 per cent) among plants set up during NPBD period than those installed during pre-NPBD years (10 per cent). This indicates an improvement in the technical supervision of plants during their construction and perhaps greater availability of trained masons during NPBD period.

Observationsfrom States

The evaluation in Maharashtra and Karnataka was undertaken by Operations Research Group (ORG). In these two states altogether 2066 plants were chosen at random and studied The following observations are the outcome of this exercise. It is important to point out that the total number of plants installed in the two states till 1985 accounts for about 28 per cent of the total plants installed in the country during the same period. Hence the observations made here are true of about one-third of the plants in the country. The ORG study shows that more than half (55 per cent) of the 2066 plants surveyed in the two states were installed during NPBD period and on an average the plants were in operation for the past 3-4 years. These plants were selected at random from the list of total installed plants provided by the implementing agencies. During field work ORG survey team did not find a single plant which was not in existence although some of the plants indicated in the list were underconstruction The study found that in Maharashtra and Karnataka, the proportion of non-working plants (10 per cent) was still lower than the national average of 15 per cent The major defects in the non-working plants were corrosion and leakage in the dome, crack in the digester or inlet|outlet pipe, leakage of supply pipe, little or no gas production

Among the working plants, insufficiency of cooking gas was reported by about 21 per cent of the families in Karnataka and 12 per cent in Maharashtra In both the states, the plant owners lacked knowledge about and initiative for plant maintenance which could boost gas production. Many of them even did not know the correct dung-water ratio for preparing slurry. For example, among the families which reported insufficiency of cooking gas 40 per cent in Karnataka and 84 per cent in Maharashtra were making slurry with improper dung and water ratio, mostly adding more water than required. Similarly, checking leakage in pipe|dome, stirring slurry, removal of water from supply pipe etc., were attempted by only 4 per cent of the families or less. The study also brought out that decision about plant size was not always taken on the basis of ownership of cattle rather on the number of family members—present or expected. The factors were found to contribute to insufficiency of cooking gas for the family. In the long term interest of the programme; it is desirable that more attention is paid to educate the plant owners about the do's and don'ts of the plant maintenance. However, the problems cited above are not difficult to resolve.

The study observed that before owning a plant, the families had invariably visited one or two working plants. This indicates that a working plant by itself could be a means to promote bio-gas. In remote villages where this technology has yet to make inroad, setting up of some demonstration plants for example at selected Anganwadis could have a very positive impact on the rural masses. The money provided to Anganwadis for purchase of fuel could be used for dung to run the plant

Official support

Evaluation of organisational aspects of the programme revealed that the officials of the implementing agencies|departments as well as financial institutions in the two states were very supportive to the programme and were taking prompt actions to minimize delays due to official formalities. In both the states, nearly three-fourths of the applications were processed for sanction of plant and bank loan in less than a month. So much so that one-third of the applications in Karnataka and a little less than two-third in Maharashtra had not to make a single visit for getting sanction of loan for the plant During informal discussions the officials revealed that they were prepared to take the responsibility of meeting higher targets provided more technical staff as grass roots level are made available for educational and motivational support

The ORG study also showed that ownership of bio-gas led to lesser dependence on other fuels For example, after owning bio-gas, the proportion of families using dung cakes in the two study states declined by 83—88 per cent ; fire wood by 48—57 per cent ; sticks|twigs by 37—64 per cent : agricultural waste by 42—51 per cent and kerosene oil by 43-44 per cent This means a major conservation

(Contd. on page 31)

Warehousing corporations—a profile

A. Ranganathan

Warehousing, says the author, is an age-old phenomenon which in modern international context constitutes the dynamic phase of commercial storage and marketing coupled with training of personnel in scientific warehousing techniques. In India, three factors, particularly the Green Revolutions led to the development of this system. The warehouses can serve as insurance agents against different kinds of contingencies.

VIEWED IN HISTORICAL PERSPECTIVE, Warehousing dates from ancient times when the phoenicians dominated the international trade lanes and realised the necessity to construct storage vaults for their precious cargoes in order to facilitate the placing of goods for rapid retrieval. Again the ports of Venice and Genoa conducted public warehousing transactions during the Middle Ages. And in the modern international context, Warehousing constitutes the dynamic phase of commercial storage For it ranges from material handling systems as well as control and information systems to the creation of a systems Approach to Warehousing Operations in a modern economic setting.

Warehousing in India

Switching to India, it is well to highlight three factors which have led on to the development of the concept of Scientific Warehousing in India. First, the Royal Commission on Agriculture (1927) argued that the major defect of the Indian Agricultural Marketing Economy, was derived from the non-availability of storage space. Second, as a result of the specification in the pattern of cropping and development of transport facilities, fertilisers, irrigation schemes and improved seeds, the need for organized marketing as well as the need for scientific storage became especially relevant to the current Indian economic scene. And finally the case for the development of scientific warehousing as a "countervailing force" (to use a Galbraithian expression in a different context) to what Sir Malcolm Darling described as "Rural Indebtedness" is obvious. Here it is necessary to quote from Dr. Manmohan Singh's (Dr. Manmohan Singh, a former Governor of the Reserve Bank of India and currently Deputy Chairman, Planning Commission) Foreword to the Golden Jubilee publication entitled The Reserve Bank and Rural Credit* : "In the great national effort of building up a sound edifice of rural credit in India, the Reserve Bank had the benefit of drawing upon the wisdom, foresight and services of several distinguished public figures, social scientists, non-official co-operators, agricultural credit and financial experts as well as officials at various levels in the Bank's Agricultural Credit Department and in the State and Central Governments ... . These include past Governors of the Reserve Bank particularly Shri C. D. Deshmukh and Shri B. Rama Rau... . .... and eminent public servants such as Sir Malcolm Darling...... ....." Indeed Sir Malcolm worked out an economic model of "Rural Indebtedness" which is still pertinent to the Indian peasantry

CWC—objectives

The All India Rural Credit Survey Committee set up by the Reserve Bank of India in 1954, reiterated the point—already made by the Royal Commission

*The Reserve Bank and Rural Credit, published by the Reserve Bank of India, page ii, 1985.

on Agriculture (1927)—for establishing a public Warehousing system in India. This Committee's recommendation resulted in the enactment of the Agricultural Produce (Development & Warehousing) Corporation's Act, 1956. It was replaced by the more comprehensive Warehousing Corporations Act in 1962. The Central Warehousing Corporation (incidentally, the Meghalaya Warehousing Corporation was established on March 30, 1973) started functioning during July 1957—August 1958. Here the five main objectives of the Warehousing Corporations can be summarised : (a) the creation of negotiable paper to provide an instrument for expansion of credit through Commercial Banks for the benefit of producers, depositors and others (b) the addition to the totality of the nation's real income by reducing waste and losses in storage and by promoting and developing Warehousing and scientific storage facilities (c) providing assistance in orderly marketing through the introduction of standard grade specification's and the Warehouse Receipt (d) Training of personnel and (e) assisting Government and Government sponsored organisations to arrive at their schemes of price support and price control.

TNWC

"The increase in the income of the Tamil Nadu Warehousing Corporation' observes Mr P. Natesan, I.A.S. Managing Director of the T.N.W.C. "year after year is mainly due to the creation of additional storage capacity through the construction of godowns at various places in the State". Furthermore, Warehousing creates what economists term place-time values in the marketing process. For the Warehouse can give insurance against different types of contingencies. To cite an example, the Warehouse gives insurance against a contingency which can be created if the production of fertilizers is to be shut down temporarily as a result of the unavailability of materials. To cite another example, an important function of the Warehouse—also known as the reservoir function of the Warehouse—lies in levelling out the cycles of commerce. In fact the need to accumulate paddy for subsequent distribution is based on fluctuating demands. And the construction programme which is financed through loans obtained from the State Bank of India and the Andhra Bank under the NABARD refinance scheme, internally generated funds and share capital contributions from the State Government and the Central Warehousing Corporation is given below :

Table I

Year	Share Capital during the year	Bank loan	Internally generated Funds	Grand Total
	(Rupees in lakhs)			
1983-84	40.00	48.00	54 00	142 00
1984-85	20.00	173.00	101.00	294.00
TOTAL	60.00	221.00	155.00	436.00

Just as a product is either in use or in storage, so must the protected space of a Warehouse contain some dynamic storage capacity and some static storage capacity. Obviously storage capacity involves the setting aside of goods for future use and is not confined to placement in a fixed pattern. Furthermore, as a result of an imaginative application of the principle of the reservation of space—on the "rotation of space"—the T.N.W.C. has achieved a real break-through in accelerated dynamic storage capacity. And the following Tables give as an idea of (II) the continuing increase in the creation of storage capacity (III) the increase in the construction of Warehouses and (IV) the increase in the annual income of the T.N.W.C.

Table II

Year	Owned capacity	Hired capacity	Occupancy percentage
	(M T in lakhs)		
1980-81	1 97	0.53	87
1981-82	2.15	0.68	100
1982-83	2.47	0.44	100
1983-84	2.65	0.48	100
1984-85	3 37	0.69	100
1985-86	4 13	0.63	100

Table III

Year	Number of Warehouses.	Capacity M.T. in lakhs
1980-81	51	2.50
1981-82	54	2.83
1982-83	55	2.91
1983-84	57	3.13
1984-85	66	4.06
1985-86	69	4.76
as on 30-4-1986	73	4.78

Table IV

Year	Profit In lakhs of Rupees
1980-81	24.62
1981-82	69.31
1982-83	84.58
1983-84	100.10
1984-85	125.23
1985-86	180.20

The TNWC which was established in May 1958 with an authorised capital of Rs. 6 crores, consists of 6 lakhs of shares of Rs. 100 each. And the paid up capital of the TNWC as on 31-3-1986 is Rs. 541 lakhs contributed by the CWC and the Tamil Nadu State Government on a 50 : 50 basis. Furthermore, the TNWC has been able to declare 6 per cent dividend as against the guaranteed dividend of 5 per

cent desired by the C.W.C. Indeed the continuing success of the TNWC lies in the systematic linkage between the development of Warehousing Strategy (a satisfying combination of such factors as the increasing construction of warehouses, the acceleration of dynamic storage capacity and benefits to the staff based on a liberal application of rules including a 20 per cent bonus to its employees for the past six years) and the financial security in which it has matured.

Warehousing—various Phases & role

Here it is necessary to emphasize that the Government of India, the Tamil Nadu State Government and the CWC can render greater assistance to the TNWC—it must be a long-range, full-scale programme of financial assistance. Indeed the CWC, which was established in 1957, has led on to three important phases of activity—or three generations of Warehousing. Actually the first generation of the CWC helped not merely the holding capacity of the farming community but also resulted in the institutionalization of credit facilities. Again, in the wake of the Five Year plans which began to yield concrete results, the CWC entered the second generation when the Government of India recognized the trade significance of certain commodities of commercial value. And the diversification of its activities—undertaking disinfection services to a variety of economic areas ranging from Airports. Ship Dock-yards to Foam Storage points, Transit Storage points, Trader's godowns and Roller Flour Mills—enabled the CWC to enter the third generation.

The CWC can take upon itself the role of a banker—it could result in the fourth generation of national Warehousing. Such assistance, will be in keeping with the economic activities of some of the other Corporations in the country. For example, the HUDCO (The Housing and Urban Development Corporation) finances several housing projects. To cite another example, the Handicrafts and Handlooms Exports Corporation of India extends generous assistance to generate small scale handicrafts and handloom industries. To cite yet another example, the National Co-operative Development Corporation (NCDC) underwrites many co-operative schemes. And the proposed assistance—which is in addition to the assistance provided by the NABARD and other Banks—will have a three-fold significance : First, it will enable the CWC to enter the fourth generation of Warehousing in an economically meaningful context; second, it would result in something more than an adequate return in economic terms; and third, it would at once make a major and continuing contribution to the concept of scientific warehousing in India.

Here it is necessary to understand the problems and perspectives of Transport Economics, Organization, Training as well as the Technology of Warehouse Design which have an important bearing on the economy of the TNWC.

Warehouse on wheels

In order to have a "Warehouse on Wheels" (enabling the manufacturer or buyer to transport the product from the farm to the warehouse) it is necessary to locate Warehouses within 10 kilometers of railway stations. The ideal situation could be derived from a setting in which the railway siding facilities are made available right in the area where the warehouse is located. For it would sustain a combination of the twin factors of the flexibility of transportation and a satisfying warehousing economy.

CWC—need for expansions

The CWC must be brought into focus as the country's image of a National Storage Agency through an administratively effective re-structuring of the organizational pattern. Just as the vast scale and the geographical range of the CWC increases, so is there a need for the CWC to have four Zonal Managers. Here four reasons can be cited. First, the Food Corporation of India (a sister organization) has four Zonal Managers in Madras, Bombay, Calcutta and New Delhi. Second, several inter-regional problems ought to be sorted out at the appropriate levels through the appropriate authorities. Third, the Regional Managers of the CWC, who have to attend to the day-to-day matters simply do not have the time to concentrate on some of the inter-related problems which arise between the regional (it ought to be Zonal!) and the various State Warehousing Corporations. And finally, the classification of two or three States in certain regions is not at all desirable—purely from an administrative angle—at the regional level.

It is well known that the technology of Warehouse Design is undergoing fundamental changes in the entire world. Although most of the modern warehouses are of single story design, there is a need to visualize multi-storied warehouses. Indeed the need for constructing multi-storied warehouses in the future is derived from two major considerations—the possibility of storing industrial products and the necessity to adopt some level of computerization.

Operationally, a public warehouse offers more sophisticated warehousing services than a private warehouse. For warehousing is a specialised business. Also our public warehouses are administered by technically trained officials. Again, the space in a public warehouse is guaranteed, insured and operated on a scientific basis. Furthermore, it is a matter for pride that the TNWC had recently conducted two Inservice Training Courses in Warehousing for Warehouse Managers in our Training Institute (January 20, 1986—February 12, 1986)

(Contd. on page 29)

Spondylosis and backache

Prof. P. K. Dave

Cervical spondylosis and backache are one of the commonest defects encountered in orthopaedic practice in cities. Both of these afflictions are related to the human spine (i.e., the vertebral column), which supports the human erect posture as a pillar. Spondylosis, says the author, is basically a "white collar" disease. He says its' the stress of modern city life coupled with a sedentary habit that lead to these defects. While elucidating various modern therapies available, the author stresses the preventive aspect and advises regular exercises, and yoga, of course.

CERVICAL SPONDYLOSIS and backache are one of the commonest problems encountered in orthopaedic practice, accounting for nearly 50% of the attendance in the AIIMS orthopaedic out patient department (OPD). Successful treatment of backache and cervical spondylosis depends upon an accurate diagnosis and painstaking consideration of the individual patient and his problem. Unfortunately, since these problems are of a chronic nature the patients run from one physician to the other, try many systems of medicine only to go back in despair to their own devices for amelioration of the symptoms.

While it is true the symptoms of cervical spondylosis and backache can be treated satisfactorily it would be our endeavour to focus attention on the preventive aspect of this disease, so as to inculcate a culture of health consciousness and proper posture which would lead to a healthy pain-free existence.

Man is a biped animal and has acquired an erect posture over the millennia. This acquiring of the erect posture has been the bane and has led to many problems of faulty posture and consequent degenerative disorders of spine leading to pain and discomfort.

The human spine

In the human spine there are two primary and two secondary curves. The dorsal and sacral curves are primary whereas the cervical and lumbar curves are secondary. The cervical and lumbar curves have more mobility than the dorsal and sacral curves. Anatomically the human spine consists of many ring like small bones called the vertebrae which are cushioned by the intervening intervertebral discs. The vertebrae are attached to each other by means of ligaments and further supported by the muscles acting on the spine. These ligaments and muscles are supplied by fine nerve endings with special structure which transmit to our brain the sensation of stretch, stability and pain.

Human spine is a kind of pillar on which the whole body structure is supported. Even in our own culture the "kundalini" concept has emphasized the importance of human spine.

What's spondylosis

Cervical spondylosis, a condition first described in 1899, could only be clearly defined in 1948 by Brain, Bull and Knight The importance of cervical spondylosis has more in the neurological complications it sometimes produces than the bony changes which are a product of wear and tear or ageing.

The shape of cervical vertebrae and inter-vertebral discs in the cervical region give the cervical spine its characteristic mobility - forward, backward and aide-

ward movement and the rotation. This freedom of movement which culminated in the development of atlanto-occipital and altanto-axial joint at its cranial and puts an added strain on the remaining joints of the cervical region.

The aetiology of cervical spondylosis is obscure but degeneration of the intervertebral disc, trauma, accidental or occupational, faulty posture, congenital disorders and psychological strain leading to muscle spasm seem to be the contributing factors. Trauma not only does cause cervical spondylosis but could precipitate serious symptoms in a pre-existing cervical spondylosis. The congenital disorders present in a segment of spine restrict its mobility and thus add more strain on the rest of the cervical spine segment causing spondylosis.

This syndrome is classically seen in middle age and later life and is seen in the urban white collar groups who are more prone to the modern life's stresses and strains and lead a completely sedentary experience. It is not seen in heavy manual workers and labourers.

There is no sex prediliction but in western literature spondylosis has been reported to be more common in males than females. In our own experience both sexes are equally prone to get this disease.

Symptoms and signs

1 Paid :

(a) Local pain, Nagging and annoyingly severe.

(b) Radicular pain Radiation to upper extremity Headache - frontal Occipetal

Pain in chest, throat Pain on delutition.

2. Stifans :

Acute Chronic
Limitation of movements may be complete or partial.

3. Pargesthesis

Loss of sensation.
Numbness and tingling.

4 Motor symptoms :

Weakness of muscles. Wasting Fasciculations.

5. Cervical myelopathy leading to compression tetraplegia . .

6. Vertebro-basilar syndrome :
giddiness Visual and speech defect.

7. Miscellaneous symptoms :
Blurring of vision. Loss of balance Palpitation Shortness of breath. Pain over the chest cold sensation in hands

Radiological aspects

The changes in cervical spine in cervical spondylosis are seen in all patients after a certain age but they do not at all indicate the severity of the symptoms. The changes can be briefly summarised as follows :

(a) Obliteration of cervical lordosis.

(b) Exaggeration of lordotic curve.

(c) Diminution of dise space between C⁵C⁶ or C₆-C₇ vertebrae.

(d) Osteophyte formation both anterior or posterior.

(e) Narrowing of the intervertebral foramen.

(f) Myelographic changes.

The treatment of cervical spondylosis should begin after a careful diagnosis after various other conditions which give rise to similar symptoms have been ruled out.

The following modalities of treatment are followed :

(a) **Reassurance** :

Patient is to be reassured that it is a selfes limiting disease.

(b) **Physical therapy** :

Cervical spine exercises, Thermotherapy Ultrasound, Cryo therapy.

(c) **Cervical collar** :

It is only to tie over an acute phase.
Its routine use has no place in treatment.

(d) Cervical tractions :

Intermittent.
Continuous.

(e) **Yoga** :

(f) Surgical treatment :

(a) Decompression is resorted to if there are signs of compressions over nerve roots (radiculopathy or spinal cord myelopathy).

(b) Spinal fusions after decompression to provide stability.

Backache

The treatment of low backache has often been empirical and is based on the bias and training of the treating physician. An understanding of the patho-physiology of backache can make it more rational.

The natural history of spinal degeneration can be divided into the stage of dyfunction, stage of instability and a stage of stabilization. The understanding of spinal degeneration is based upon the rationale of a three joint complex, i.e., one Intervertebral

disc and two posterior apophyseal joints. A dysfunction of one leads to a dysfunction of another; ultimately a combined three joint complex degeneration leads to a multilevel spondylosis.

The treatment of degenerative disorders of spine is essentially conservative, surgery playing a minimal role. Although rest and analgesics are necessary for treatment the physio-therapeutic methods are of utmost importance in the back care programme.

Exercises of spine both extension and flexion, are relevant although it is felt that flexion exercise prevent backache by relieving the stress on the spine. A proper posture while at work and at home can play an important role in minimizing the incidence of backache.

The exercise programme has a beneficial effect in a variety of ways. It decreases pain and strengthens the muscles and therefore decreases the mechanical stress on the spinal structures. Exercises also improve posture and stabilize the hypermobile segments.

Studies on the state of degeneration in the intervertebral disc due to mechanical stress have shown that posterior part of disc gets destroyed first in the lumbar lordotic curve and therefore flexion exercise can prevent this mechanical stress. Extension exercises are contra-indicated in acute disc prolapse, spinal stenosis, spondylolisthesis and a multioperated back.

Therapies

Thermotherapy is given either as moist heat or short wave diathermy. The latter acts by producing high frequency electro-magnetic waves. **Ultrasonography** reduces pain by raising the temperature and thus producing muscle relaxation. Ultrasonic energy is also believed to induce increased cortisol concentration in spinal roots or lumbo-sacral plexus and thus produces relief of pain. Ultrasonography when used in combination with local medication like xylocaine and hydrocortisone is called "phonophoresis" and is believed to relieve pain by driving the medication into target tissues.

Transcutaneous electrical nerve stimulation (T.E.N.S.) is used in the form of intermittent or pulsed electrical signals transmitted to the patient via surface electrodes. It is believed that repeated stimulation of cutaneous afferents blocks pain in spinal cord (Melzack Wall, 1965) and peripheral electrical stimulation elevates endogenous opiate levels in brain and spinal cord. It is useful both in acute and chronic musculo-skeletal pain. **Electroacupuncture** is related to TENS—a neuraprobe detects areas of decreased skin resistance to electrical currents, then a probe of smaller diameter transmits an electrical current to these points. It also acts by increasing the CSF levels of B-endorphine.

Laser therapy products unidirectional rays which are absorbed into the cells thereby producing immediate relief. This is believed to be due to the release of ACTH and B-endorphine and regulation of cellular osmotic pressure thereby reducing oedema. The use of Laser therapy in degenerative disorders of back is now available, holds a promise of being an effective mode of treatment.

Orthotic braces for backache is used only in acute episodes to tide over it and should be discontinued as soon as possible. Abdominal and back strengthening exercise programme should be started to prevent recurrence of pain. Long braces for spinal support are not useful; on the contrary it shows an increased movement at the lumbo-sacral segment. A lumbar corset with compression over the abdomen converts it into a semirigid cylinder and allows transmission of some of the forces through the abdomen rather than through the spinal column.

Injection techniques like epidural block, indiwelling epidural block, intrathecal steroids, nerve root blocks and intradiscal injections have been tried but have to be used with discretion by physician experienced in this technique.

Canadian Back Education Unit was started in Toronto in 1974 to start a programme for the management of a large number of backache patients. The success of this programme was dependent upon a careful selection of patients regarding his/her psychological state and exclusion of any organic lession. Patients understanding of patho/physiology of back pain and a positive effect of a non-threatening diagnosis helped in the treatment of backache programme.

We have observed that stress of modern life increases the muscle spasm and pain; and this is aggravated by poor musculature due to sedentary living and total lack of exercises. This observation was strengthened by the fact that all the patients belonged to the white collar group who are more susceptible to the stresses of modern living and a singular lack of absence in the persons employed in manual labour. We found the Yoga was very useful in these patients by lessening stress, providing relaxation and improving the musculature.

(Based on public lectures of AIIMS)

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Punchayati Raj to be revitalised

A National Conference and a National Workshop on Panchayati Raj is proposed to be held to give new directions and dynamism to the policy framework of Panchayati Raj which finds a place of importance in the recently launched 20-point programme 1986. An Expert Committee set up in the Ministry of Agriculture under the Chairmanship of Dr. L. M. Singhvi would prepare concept paper on how to rejuvenate and revitalise Panchayati Raj.

The waning Jhumming :

—C. R. Das

Jhumming or shifting cultivation results in the loss of million of tonnes of soil every year in the North-eastern Region. This along with loss of inherent soil fertility due to burning of forests, contributes towards decline in agricultural production, thereby creating serious economic problems for the hill tribes. According to the author, though the impact of the various schemes has not been big quantitatively, the hill tribes have become aware of the ill-effects of jhumming and this has led to growing public demand for greater investment by the Government on rehabilitation schemes.

THE PROBLEM OF THE PRACTICE of shifting cultivation or jhumming, as is called locally, may assume a serious proportion in the north eastern region by the turn of the century with large increase in the number of shifting cultivators. At present there are about 4 lakh 92 thousand such cultivators in the region. Their number is likely to increase to 7 lakh 66 thousand by 2000 A.D Shifting cultivation is mostly practised by the hill tribes of the region.

Spacing

About 90 per cent of the population in the north-eastern region depends on agriculture. The total area under shifting cultivation in the region is about 27 lakh hectares. Out of which 16.8 per cent is cultivated at one point of time, while the rest is left for natural regeneration over a period of years. The number of years before a tribal family returns to the same plot of land, depends on the availability of land with a particular tribal community and the population in a village. During earlier decades, this period was as long as 30 to 40 years mainly due to limited population dependent on jhumming. With the increase in population, jhum cycle in most of the areas has shrunk to less than 5 years which is hardly a sufficient period for rebuilding of soil fertility in such plots.

Limited family

Since in this agricultural practice, only hand-tools are used and no modern techniques are involved, the size of the land a family can cultivate is limited to the labour force available in the family. A family on an average cultivates about one hectare of land in a particular season.

Since in jhumming, forest areas are burnt to prepare lands for cultivation, it results in deforestation. Besides deforestation the other evils which follow are loss in soil fertility, creation of ecological imbalance and erosion of top soil. In the north eastern region nearly 90 lakh tonnes of soil is lost every year as a result of shifting cultivation. This in turn causes heavy siltation in the rivers and consequently heavy floods in the lower reaches. Besides loss of soil, loss of inherent soil fertility due to burning of forests or week-cover practised in jhumming also contributes to the decline in agricultural production.

Loss of soil

The loss of top soil due to jhumming has brought drastic reduction in the production per unit area, thereby creating serious economic problems for the hill tribes of the region. The total production from jhum cultivation and the gross income from these fields are quite low.

Soil conservation

The earliest attempt to tackle the problem of shifting cultivation was made in the fifties by introducing plantation of cash crops like rubber, coffee, black pepper and cashewnut with the objective of encouraging jhumias to take to these crops. Major thrust was however given in the fifth plan period when three different programmes were introduced in the states and union territories of the region. These were soil conservation scheme in the state plans centerly sponsored scheme of pilot projects for the control of shifting cultivation; and regional river basin schemes for the control of shifting cultivation under the North Eastern Council. These schemes are being continued. The schemes were designed with the common objective of control of shifting cultivation. Under the North Eastern Council programme, 8 pilot schemes of soil conservation and jhum control were taken up in the 7 constituent units of the north eastern region located in major catchment areas While the scheme in Assam was purely a soil conservation scheme, the other seven schemes aimed at settling of jhumias to a permanent agriculture of varied form. The schemes of Manipur and Nagaland aimed at settling each jhumia family on one hectare or more areas of wet land terrace. The schemes in Mizoram and Meghalaya provided allotment of dry as well as wet land terraced fields to the families besides some slopy areas for horticultural plantation. In Tripura, the scheme was implemented both in forest and agriculture sectors with the former engaging the tribals as wage earners in rubber plantation and settling them in small colonies and providing them basic civic facilities. In the agricultural sector, the tribals were settled far away from their jhum fields in a new area and allotted developed land for growing cereals and horticultural crops. The schemes also provided various other kinds of incentives such as assistance for purchase of bullocks and power tillers and construction of houses.

Awareness against jhumming

Though the impact of the various schemes has not been quite big quantitatively, compared to the big number of jhumia families practising shifting cultivation in the region, the hill tribes of the region have become aware of the ill effects of jhumming, dwindling productivity of jhum fields and the enormous labour involved in jhum cultivation. This has generated a healthy trend of public demand for greater investment by the Government towards rehabilitation schemes. □

(Courtesy · Spotlight, AIR)

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(Contd. from page 24)

and (August 2, 1986—August 27, 1986) at Chetpet in Madras. This type of Management Training (including a variety of disciplines such as Technical and Quality Control, Business, Marketing, Sales, Finance. intermediate engineering technology with the teaching tools like course materials, Public Relations, audio-visual aids, field trips etc.) is conducted at the CWC, Hapur and Ludhiana. And it is our hope that this Training Institute would develop into a pioneering post Harvest Technology Training Institute in South India.

In an essay* entitled Biography as a prism of History, Mrs. Barbara Tuchman observers that access to too much information could produce a warehouse instead of an historical portrait. Perhaps it is well to remind ourselves (and Barbara Tuchman too) that a systems approach ranging from the technology of design to the problems of cost, location, number and size of warehouses and transportation, at the operational and manufacturing levels—embracing the procurement—production—distribution cycle—could well result in a portrait of modern economic history.

*Practicing History : Selected Essays by Barbara Tuchman, published by Alfred A Knopf New York, 'Biography as a Prism of History', page 87, 1981

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Guidelines for minimum wages

The Government has drawn up guidelines to remove regional disparity in minimum wages. There will be six regional Minimum Wages Advisory Boards to fix regional minimum wages for selected employment. Employment spread over more than two States having wide differences in wages and causing flight of industry and business from one state to another could be taken up at the first instant.

It has been suggested that regional boards must meet twice a year. While fixing wages, they should take into account the previling wage rates and keep the concept of poverty line in view as suggested by the Planning Commission. The poverty lines used in the Seventh Five Year Plan is annual household income of Rs. 6,400 for runral areas and 7,000 for urban areas.

Advisory group on water management and irrigration potential set-up.

The Planning Commission has appointed an Advisory Group to study and guide implementation of the Action Plan in respect of water management and irrigation utilisation. The nine member group is headed by Member (Agriculture) of the Commission.

There has been a sizeable gap in the creation of irrigation potential and its utilisation in various irrgation projects and with period, this gap is widening. Concerted efforts are, therefore, required to identify the problems with respect to the gap in the potential and its utilisation and take suitable timely remedial measures to close this gap at the earliest. It is proposed to initiate Action Plans for diagnostic study starting from a micro-level under various irrigation projects and/or to throw up only other issue for study and action for improvement in irrigation utilisation.

Transportation through pipelines, the Soviet way

P. Bhattacharyya

In the 19th century newly discovered steam engine fast replaced theose dncarts and sailing ships as the two important means of transport on the land and sea. Since them many new developments have taken place in the field of science. Air transport came into being and oil and electricity have replaced coal in sea and land transport. But the pipelines today appear to be the most prospective means of hauling cargoes. In this article, the author studies the experience of the Soviet Union, one of the pioneering countries in this field.

TWENTY-ONE YEARS AGO the share of pipelines in cargo transportation in the Soviet Union made up slightly more than three per cent. Today it is over 30 per cent.

The main function of pipeline today is transportation of fuel. The customers receive a considerable portion of oil and practically all natural gas via pipelines.

The delivery of fuel via pipes is approximately 50 to 66.7 per cent, much cheaper than by rail. Besides, pipelines ensure the uniterrupted and reliable operation under any weather conditions. Of course, the shift of oil and gas producing centres northward eliminates many advantages, complicates the construction of pipelines and makes it more expensive. However, these expenses are justified—gas, for instance, should be transported only through pipelines."

According to Yuli Bokserman, Vice-Chairman of the State Commission of Experts (USSR State Planning Committee) the Soviet Union has been the first in the world to build gas pipelines large in diameter —1,420 mm. At present more than 60 per cent of the Soviet Union's gas output are pumped through them. To this day the Soviet Union is practically the world's only builder of gas mains of this class The most famous of them are the 3,000 kilometre Soyuz pipeline which has linked the Orenburb gas deposits in the Southern Urals with industrial centres of socialist Eastern European countries and the 4,450—kilometre pipeline from Siberia to Western Europe which has made it possible to increase greatly Soviet gas exports to Austria, Federal Republic of Germany, France and Italy and also to CMEA member-countries.

Coal and ore thro' pipelines

When one speaks about pipeline transport one generally implies the pumping of gas and oil and also products of oil refining This is quite understandable, these types of fuel are very convenient for the transportation via pipes, and the length of gas and oil pipelines in the Soviet Union is already over 200,000 kilometres. However, of late the sphere of the application of pipelines has been expanding.

Experience of the Soviet Union is that coal transportation via pipes is very efficient. But it is necessary for this to pulverise coal and mix it with water for obtaining pulp which then can be pumped. Systems of coal hydrotransport already operate in the Kuznets

coalfield in Western Siberia. The construction of a larger (250-kilometre) coal pipeline from the Kuznets coalfield to Novosibirsk is under construction. The pulp will be pumped via pipes 426 mm in diameter under pressure of 100 atmospheres. The construction of this complex will become a testing ground for establishing a large hydrotransport system of supplying the power stations in Siberia and in the Urals and, subsequently, also in the European part of the Soviet Union, with coal. For instance, the project of the Kuznets coalfield-Urals pipeline is being designed. The pipeline will be 2,400 km long.

Pipelines are also efficient for transporting ore concentrates. For example, the 30-kilometre pulp pipeline operates at the Norilsk mining and metallurgical complex on Taimyr peninsula. A pipeline is under construction for transporting iron are concentrate at the electrometallurgical complex in Stary Oskol (Central Russian), and similar projects for Ukrainian metallurgical enterprises are now being worked out.

However, despite the attractive features of hydrotransport it has also some drawbacks. For instance, after the completion of the transportation cycle it is necessary to carefully purify water. This is why specialists have been attracted by another method of transporting hard and dry cargoes, which gives much less troubles. This means container pneumatic transport which enables one to solve a very large range of problems.

Trains through pipes

Developing the old idea of pneumatic mail, Soviet experts have suggested the application of the energy of compressed air for transporting in pipes very large (up to several tons) container capsules.

The world's first cargo-carrying pneumo-container lines the Lilo-I and the Lilo-II were built in Georgia. They are very simple and economical. For instance, annually about 2 million tons of building stone are transported via the Lilo-II line. To carry out such a volume of transportation by automobiles it would be necessary to use about 300 powerful tip-up lorries which consume an enormous amount of fuel.

Outwardly pneumo-container systems resemble a conventional pipeline inside of which trains of six to twelve containers move at a speed of 50 to 60 kilometres per hour. All operations—transportation, loading and unloading of containera—are performed automatically. As a rule, the mode of train movement is computed.

The demand for pneumocontainer systems is very high. They are used not only for transporting various contruction cargoes, but also in intra-factory transport systems. Besides, pipelines for transporting household waste are built in large cities. The efficiency of pneumo-container transport has interested also foreign specialists. The Soviet design has been patented in the United States, Great Britain, Federal Germany, Canada and Italy while Japanese companies have bought licences for the construction of pneumatic systems designed in the Soviet Union.

In this perspective India with its fast pace of industrialisation, stands to gain much from the Soviet experience of utilising various modes of pipeline transport. Building large diameter pipeline and pneumo-container systems has bright prospects not only in the term of more economic transport of goods but also may provide much sought relief to the hard pressed Indian railways. □

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(Contd. from page 21)

of other cooking fuels and at the same time lesser exposure of women to smoke and other hazards associated with these fuels. It was observed that in Maharashtra, women working in kitchen and suffering from eye or respiratory problems was two times more among non-users than users of bio-gas. The study observed that bio-gas not only brought down women's fuel collection time, it also reduced the number of persons involved in this activity. It was found that families which stopped using dung cakes, for them, time saving was of the order of 2 hours and 44 minutes per day and those who continued to use cakes for some purposes, for them the saving was of the order of one hour and 34 minutes. Because of this saving of time, women in about one-tenth of the families in the two states were able to join cash earning activities; one-third spent more time on child care, and a little over one-fourth of the families in Karnataka and two-fifth in Maharashtra could pay more attention to family chores. One out of every eight women in Karnataka were able to enjoy a little more rest (this benefit should not be undermined considering the fact that on an average in rural areas women work 10—12 hours a day). The study found that the decision to own a plant was mostly taken by male members although bio-gas is largely used by women.

The evaluation thus shows that on the whole bio-gas programme is doing well although there are areas which need to be strengthened. The observations from Maharashtra and Karnataka clearly demonstrate that the indirect benefits of bio-gas go to the more disadvantaged group i.e. women and its significance should not be undermined while making cost benefit analysis of this developmental programme. □

Reserved for Readers

Taxing the rural rich

First of all, please accept my thanks for providing your readers with an opportunity to communicate with you and other readers. As a regular reader of YOJANA. I must admit YOJANA helped me in understanding various problems of our national economy, and also in passing M.A. (Economics) examination.

In the issue dated September 1-15, 1986 an important aspect "Taxing the rural rich" has been discussed objectively by eminent scholars. In the article entitled "But it needs political will !" Mr. Navin Chandra Joshi convincingly opines, "Capital formation in the present stage of our industrial development must come from agriculture. Agricultural inputs like fertilisers, water, diesel and power worth hundreds of crores of rupees are allowed by the Central and state governments. Surplus funds with the rural rich have created many a social, political and economic spheres."

Furthermore, Sir, income from trade and industry too is shown by many as earned from agriculture. The required political will to levy agricultural income tax, based on land holdings, would develop only by switching over to a system in which the political stability strengthens the hands of the government to increase the dimension of our agricultural tax net.

Today, unfortunately, the vote banks exist in rural areas, controlled by affluent land-owners. Most of the political parties, ruling as well as the opposition, bend backwards before these rural overlords. Once the existing nexus between the rural rich and politician is severed, we could rigthly hope for distributive justice for the much-exploited farm labour as well as the consumer. Of course, the extra rupees in national exchequer through agricultural income tax would help spur the economic development.

Kanwar Devindra Singh
NASIK (Maharashtra)

Taxing the rural rich

I am very much impressed by the well argued case about Imperative of Taxing the rural rich by D. R. Kamta Prasad. My congratulations to him.

I think that instead of taxing the rural rich, as the number will be quite small and collection charges quite high, it will be better if we introduce land reforms in the true spirit. It will mean breaking up to big farms and the need of taxing rich will automatically be not desired. Moreover, it will give better purchasing power to those persons who will acquire the land and with the help of DRDA agencies their productivity can also increase. It will give a big thrust to the sagging economy and give a better status to the rural poor. It may be considered as poverty alleviation programme as well. This will solve many problems at a stroke. If IRDP programme is executed in a proper way and corruption rooted out at all levels, the lot of the poor would automatically better. As the democracy is maturing majority of people are being suppressed under the daily rise in prices. At the present trend, by 2001, our nation will be sharply divided into haves and have nots and corruption will be rampant in society, weakening our national fabric. So the only solution is land reforms.

Prof. M. M. Singhal
M. D. University, Rohtak

Public sector

Your issue on Public Sector (September 16—30) was thought-provoking. For a developing country the problem of economic reorganization assumes parmount importance after attaning independence. The state helps to resolve the contradictions arising between different forms and to mould them into a single economic body. But the state cannot accomplish these functions if it remains merely a political superstructure. Since it cannot rely totally on any one of the existing forms, it has to partially replace the economic functions of the existing economy by a new social form—one which serves as the basis for implementing an effective economic policy in the 'National Interests'.

The public sector is the most socialised economic institution. A significant feature of its production process is that it is not guided strictly by the law of value, i.e., with an aim of profit maximization. Using the financial and credit systems the state mobilizes resources in the 'National Interests'.

However, even the big industrialists do not want the public sector to be abolished completely because it depends extensively on the direct aid from the State. In India where the domestic market is narrow—the State is also the main consumer of many of the goods produced by the private sector.

To have a more healthy competition, some incentive measures should be applied. Payment of assets is one of them. In the Soviet Union, every State-owned enterprise has to contribute a certain fixed amount of profit to the state budget. This contribution depends on the size of the enterprises fixed-assets (buildings, installations, plant etc.) and current assets normalised, which usually amounts to 6 per cent of their value.

The purpose of the payment for assets is to get enterprises financially interested in the thrifty and efficient use of productive assets. Payment for assets is in direct proportion to their size; so the greater the profit per unit of fixed and normalised current assets, the more remains at the disposal of the enterprise.

Anjani Kumar
Kirori Mal College Delhi

JUTE INDUSTRY TO BE MODERNISED FUND SET UP

Government has finalised the details of the scheme for modernisation of the jute industry. The scheme envisages setting up of the Jute Modernisation Fund, as announced recently by the Prime Minister. It will operate on the lines of the Textile Modernisation Fund.

The Government has been contemplating various measures to revitalise the jute industry in view of the declining trend in this industry over the last few years which is attributed mainly to obsolescence of machinery and equipment, lower productivity and demand trends for jute products. It has now been decided to give a major thrust to modernisation programmes in the jute sector which will contribute towards increased production, upgradation of quality, product diversification and thereby ensure sustained growth in demand so as to benefit jute growers as well as the industry.

The Industrial Finance Corporation of India (IFCI) has been designated as the nodal agency to administer the Modernisation Fund of the order of Rs. 150 crore earmarked for the jute industry.

Out of this fund, about Rs. 120 crore will be utilised for assisting the weak but potentially viable jute mills in their modernisation programmes. The weaker units will be given concessional loans for meeting upto 80 per cent of the required promoters' contribution at a concessional rate of interest at 6 per cent. The differential in the interest subsidy will be provided to the nodal agency by the Central Government.

In order to facilitate modernisation, it has also been decided that a specified category of jute machinery and equipment required for modernisation which is not indigenously manufactured can be imported on duty free basis upto a period of three years. The position is to be reviewed thereafter. □

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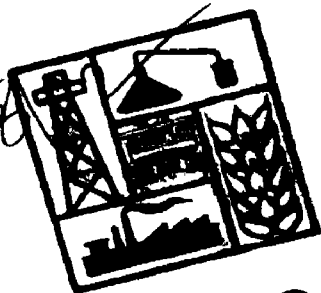
MAJOR THRUST IN RURAL ENERGY DEVELOPMENT IN SEVENTH PLAN

The Integrated Rural Energy Programme (IREP) will be fully achieved in all the States and Union Territories during the Seventh Plan. According to the Seventh Five Year Plan document, efforts would be made to develop the institutional mechanism in all the States and Union Territories for planning and implementing such integrated projects in selected blocks in each state.

The document says that during the Seventh Plan period, the IREP would consist of (1) developing institutional mechanism in the States and Union Territories (2) training, (3) project preparation, (4), project implementation, (5) provision of financial incentives and (6) monitoring. These components will be funded through central and State financial outlays for IREP.

The IREP programme was started initially in four States in 1981 and subsequently extended to five more States by 1984-85. By the end of the Sixth Plan period, 120 block level IREP projects were in different stages of implementation in the selected States. In each of the pilot projects a block-level integrated energy plan was prepared, based on which the mix of different energy options were promoted. The main items that were promoted included windwells, solar cooking and heating systems, biomass, improved chulhas, improved bullock carts, improved kerosene stoves, improved equipment including pumpsets for better utilisation of electricity and better designed pressure cookers. □

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Resource mobilisation and our plans

NEXT ISSUE

Why poverty persists ?

INTEGRATED RURAL ENERGY DEVELOPMENT DURING SEVENTH PLAN

A MAJOR EFFORT is being mounted for rural electrification which includes village electrification and energisation of pumpsets. Sixty four per cent villages were electrified upto the end of the Sixth Plan period and the target for the Seventh Plan is 1.8 lakh villages. Similarly, a major programme has been launched for promotion of family size biogas plants. Six and a half lakh plants were installed up to March 31, 1986.

During the Sixth Plan period, an integrated rural energy programme on a pilot basis was designed and developed by the Planning Commission in eight States. In the last four years, this programme has been developed and refined to take into account the various implementation problems including the coordination between energy and rural development programmes. The Planning Commission has been working closely with the concerned Departments, in particular, the Rural Development Departments in the States and the Centre, to develop the programme.

It is proposed to take up at least 200 blocks in the Seventh Plan as part of this programme.

Although 80% of the population of the country lives in the rural areas, they get less than 20% of the total energy resources especially the scarce commercial resources. While 35% of the plan investments are being made in the energy sector, the benefits of the large scale investments do not reach the rural people who have to survive on non-commercial sources including agricultural waste, firewood and cow dung, thereby resulting in large scale environmental destabilisation. This imbalance can be corrected through the preparation of integrated area base rural energy plans for which expertise is being created in each State and district and blocks. □

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Resource mobilisation and our plans

Dr. Ram Vichar Sinha

In this paper the author examines and identifies the problems associated with the financing of the Five Year Plans right from the First Plan. He feels that the uncovered resource gap of Rs. 14000 *crore in the Seventh Plan has got to be covered through deficit financing. In view of this foreign aid has to be pursued but with caution only "as a means of resource mobilisation for development". Alongwith it efforts will have to be strengthened to achieve the goal of self-reliance by giving impetus to our export industry.*

REALLY SPEAKING THE SIZE OF A PLAN is determined in ultimate analysis by the amount of the real financial resources that a community can mobilise by its efforts. A country's ability to mobilise large resources in the under-developed or developing economy is limited by the fact that its production base is limited in relation to its requirements. The ~st growing size of India's successive Five Year Plans greatly augmented the significance and the prob- of resource-mobilisation. The financing of the ıding public enterprises through various fiscal s has assumed a crucial role in our planning ss.

the basis of the pattern of financing the Plan in the general format of the Government, the sources are: (1) Government savings consist of: (a) surplus on current account, ldditional taxation, and (2) surplus of the public enterprises. The major sources of domestic resources are : (1) Public loans and small savings, and (2) deficit financing. In addition, the role and limitation of external assistance as an instrument of financing plans has also a considerable bearing on the issue of resource mobilisation particularly in the Indian context.

A theoretical review

Government Savings : The size of Government savings available for financing plan programmes depends upon two factors, viz., (i) The size of the non-developmental expenditure, and (ii) the magnitude of additional taxation. The Government surplus on current revenue can be raised by means of additional taxation which covers two things viz., (a) rise in the rates of the existing taxes, and (b) imposition of the new tax measures. Taxation as a means of financing development projects has certain merits. It is an effective instrument to increase the rate of saving and it does not involve any inflationary tendencies. It also leads to a diversion of real resources from consumption to investment having a favourable redistribution effect. However, the size of resources that can be generated through this device in an economy is limited by the taxable capacity of the community. Higher taxes beyond limit are positive disincentives to more work and further leads to widespread evasion and avoidance that corrupts the society. H.N.P.S. Suman asserts that taxation can go a long way to augment the resources for capital formation in the under-developed countries. The Taxation Enquiry Commission of India holds that taxation may be the most effective means of increasing the total volume of savings and investment in an economy where the propensity to consume is normally high. But it has also been suggested that restriction of consumption by taxation seems desirable but it should not "fall below

the initial level" affecting the investment and the lower standard of living. As regards taxation, it no longer remains simply a source of revenue. It serves sundry purposes like regulating consumption, mopping up the increased income inducing the desirable investment and eliminating the unproductive investment. It is for this reason that B. Mishra had advocated a properly diversified scheme of taxation both to increase the resources of the Public Sector and to maintain proper balance in the economy.

Surpluses of Public Enterprises : The surplus from the public enterprises is a potentially important source of resources in the under-developed countries. This is considered as a 'painless and very convenient method of resource mobilisation'. The U.N.O. experts remarked that profits of corporations might assume great importance and might become 'an indispensable source of finance for future development'. Dr. V.K.R.V. Rao also is in favour of the plea that the price policy in the Public Sector should be such as to yield a planned profit which will include 'not only depreciation but also a contribution to the maintenance expediture of the state and an element of surplus for capital formation', specially in the Indian context. Now it is justified that profit in this area is not necessarily inconsistent with the public purpose. The mixed economy of our country is characterised by the coexistence of the public and private sectors. The public sector has been raised both by nationalising some enterprises in the private sector such as insurance business, banking, mines, industrial enterprises, etc. and by establishing new enterprises. It is generally now held that there cannot be a better substitute to public enterprises for the finance of developmental planning. W. A. Robson was in favour of the earning of the surplus for building up the reserve fund and thereby for financing the expansion and development of the industry, if not feeding the Government exchequer. The total investment in the Central Government industries and commercial undertakings upto March 1968 in the country was Rs. 4912 crore while borrowing in foreign exchange repayable in twenty years at six per cent interest rate constituted Rs. 1743 crore. This would mean repayment of Rs. 191 crore in foreign exchange every year. To meet only their interest and part payment of the principal charges on the loans, public enterprises in India would have to generate a surplus of Rs. 588 crores. The views of P. R. Brahmanand, V. K. R. V. Rao and U.N.O. experts favouring profits or surplus from the public undertaking are justified on social and economic footings.

Public Borrowing and Small Savings : In the domestic resources of an under-developed economy, public borrowing or internal public borrowing has its own importance. In such an economy, the voluntary savings are very small which limit its prospect. As we know taxation has its own limitations and as such resorting to internal public borrowing becomes necessary. The sources of the Government are normally supplemented by public borrowing and small savings. It is not only an effective instrument for mobilising private savings into the hands of the Government, it also finds favour with people since Government pays interest on the borrowed funds. The Government can also take resort to compulsory method of savings by enforcing such legislation as the compulsory deposit schemes. The Government often makes its borrowing programme much more attractive by providing incentives like tax free interest earning, prize winning schemes, recurring investment of pretty small denominations, interest inducements and life insurance, etc. The effectiveness of this method is limited by the weaker ability of the people to save because of low level of income and the predominance of rural economy lacking organisational structure to mobilise small savings. But at the advanced stages of development, public borrowing and small savings may play a more prominent role. It makes the effectiveness of the monetary policy smooth, supplements the resource gap, rejuvenates the money and capital markets and channelises the existing savings into the desirable and productive uses.

Deficit Financing: Deficit financing means expenditure which is in excess of current revenue and non-bank borrowing. The phrase 'deficit financing' is used to "describe the financing of a deliberately created gap between public revenue and public expenditure or a budgetary deficit". The Planning Commission's view about this concept resembles this viewpoint. The Government may cover the deficit by running down its accumulated balance, i.e., withdrawing its cash-balances; by borrowing from the Central Bank or commercial bank or by creating new money resorting to the printing press. In plain language, deficit financing means public expenditure in excess of public revenue. Deficit financing is the method by which we can reconcile the twin objectives of capital formation and employment. The situation obtaining in the Indian economy is a close approximation to the fact showing surplus labour but no surplus capacity in capital resources. J. A. Schumpeter made a powerful case in favour of inflation as a tool of development finance. The U.N.O. experts also held that "within bounds, inflation is itself an acceptable pragmatic instrument of a development policy".

Deficit financing is more generally regarded as an inflationary way of financing development due to increase in money supply with the time-lag and with a decline in the availability of consumer goods. After a stage in the race between costs and prices, the economy gets into the grip of spiral inflation. Only when the rise in prices is not followed by a proportionate rise in costs, there will be a permanent gain in investment from the inflationary method. It means that the original price rise must be moderate enough to induce a concomitant rise in cost. To sum up, deficit financing can help as a powerful and helpful tool especially in the initial stages of develop-

ment when there is need of the economy being monetised. Deficit financing may prove a useful instrument for development plan if it is judiciously made use of. W. A. Lewis also stressed the role of inflation for capital formation with his positive confidence. However, there is unanimity of the views that inflation is not an unmixed blessing as a means of development financing. The economists like late C. N. Vakil, P. R. Brahmanand and others advocating 'SEMI-BOMBLA' have greatly emphasised that monetary expansion is the cause of inflation in India.

External Assistance: Not to speak of the under-developed countries nearly every country has sought the use of external assistance in the shape of foreign capital in course of its development owing to resource-bottlenecks. The U.S.S.R., the U.S.A., U.K. and Japan too have used the external resources in course of their path of economic progress. The domestic resources are not adequate for the desired rate of investment and the earnings from the exports are not sufficient to pay back the repayment obligation. Against this background, in India the foreign aid and assistance has been accepted to transform the economy into take-off stage. Thus the views of the Indian writers such as R. P. Patnaik, P. K. Raj and R. K. Sinha in the Indian Economic Conference Volume of 1972 favouring external resources or assistance seem justified.

External assistance performs three important gap-filling functions in a developing economy, viz., (i) saving-investment gap, (ii) foreign exchange gap, and (iii) trade gap.

Saving-investment gap: The key to the development problem lies in raising the rate of capital formation. The scope for a sharp rise in domestic savings is limited by the prevailing low levels of income, slow rates of growth and rising expectations in under-developed economies. The gap between investment requirements and domestic savings can be bridged by foreign capital.

Trade gap: The second important function of foreign capital is to provide foreign exchange and thus help to fill in temporarily the 'trade gap' caused by expanding imports needed to sustain the process of industrialisation and stagnant exports. Some 'strategic goods' such as capital equipment, technical knowhow, etc., are not locally available and could be procured only from external sources. Technical position of industrialisation requires complementary foreign resources and external assistance along with domestic resources otherwise the domestic resources would remain idle.

While external assistance can thus play a multi-purpose role, there are very many difficulties, problems and complications associated with it. For example, it is a very uncertain source. It often creates a sense of feeling of complacency and mitigates the urgency for maximising domestic efforts to mobilise resources. The task of repayment may involve a colossal burden, side by side the fear of political interference by the donar country in the affairs of the recipient country may tell upon the economic and political progress of the recipient country.

Components of foreign capital

The chief components of foreign capital are: (a) Grants, (b) Loans, and (c) Equity investment. Grants originates from public, semi-public and private charitable organisations. By and large they are meant for immediate consumption and relief purposes. They do not impose any repayment obligations. As regards loans, they emanate from various sources such as individual countries and institutional agencies. The objectives behind loans are to provide the medium and long-term capital needs of developing countries. The loans carry repayment obligation.

The private and foreign equity investment originates in the form of joint collaborations or direct investment. Generally profit is the prime motive of such investments on medium or long-term basis. Such investments may also act as an instrument of transfer of technology. They also carry repayment obligation in the shape of royalty and dividend payments. On the winding up of the enterprise, the assets may also have to be repatriated to the country of origin.

Trends of domestic resources

The saving rate in India had been showing a mixed trend during the first two decades of economic planning. The total savings in India were estimated at Rs. 651 crores in 1950-51 which accounted for about 6.82 per cent of the net domestic product during the year. The rate of saving came down to 6.20 per cent; in 1958-59 and thereafter ranged between 9 per cent and 13 per cent during the next decade ending with the year 1972-73. After 1972-73 there was a rather dramatic improvement in the savings rate which rose from 12.43 per cent in 1972-73 to 15.7 per cent in 1973-74. It further went up to 17.6 per cent in 1976-77. In fact, our saving rate is comparable to the rate in middle income and even some high income industrialised countries. The average rate of savings in the household sector has increased from 4.05 per cent during 1950-52 to 17.50 per cent during 1977-1980.

Government savings

Government savings formed about 23 per cent of the total domestic savings in 1984. The Government share like that of household sector had been registering up and down trends. It was as high as 31.89 per cent in 1951-52 and came down to the low

level of 10.59 per cent at the end of the First Plan. It again touched the height of 30.10 per cent during 1964-65. Subsequently, the Government savings showed a declining trend from Rs. 611 crores in 1964-65 to 355 crores in 1967-68. After this period, the Government savings registered an upward trend rising to 25.34 per cent in 1975-76, to a small decline in the rate with 22.74 per cent in 1976-77 and 22.3 per cent in 1981-82. The share of public sector had formed 22.92 per cent of gross capital formation. This rose to 46.5 per cent in 197[illegible]-80. It indicates the growing importance of the public sector in the economy. The contribution of the domestic resources to the total financial resources of the various Five Year Plan in India was 90.4 per cent, 77.5 per cent, 71.8 per cent, 64.1 per cent 84.7 per cent and 85.2 per cent in the First, Second, Third, Three Annual Plans, Fourth and Fifth Plan (revised estimates) respectively. In the Draft Sixth Plan (1978-1983), the contribution from the domestic resources was expected to go upto 91.4 per cent of the total resources.

During the First Plan, the Government's own budgetary resources accounted for Rs. 752 crores and public borrowing amounted for Rs 686 crores. In the Second Plan, the corresponding figures were Rs. 1230 crores and Rs. 1439 crores. In the Third Plan, they stood at Rs. 2908 crores and Rs. 2113 crores. In the Three Annual Plans, the budgetary resources of the Government fetched Rs. 1622 crores and Rs. 2026 crores from these two sources. In the Fourth Plan, the figures stood at Rs. 6382 crores and Rs. 6516 crores respectively. In the Fifth Plan (revised estimates), these corresponding figures were Rs. 20443 crores and Rs. 11672 crores. In the Draft Sixth Plan (1978-1983), these resources were expected to contribute Rs. 36185 crores and Rs. 23835 crores respectively. In the Seventh Plan, the aggregate additional resource mobilisation of Rs. 44702 crores has two components ; Rs. 21250 crores from tax and non tax sources of the Central and the State Governments and the rest Rs. 23452 crores would be obtained from public enterprises including Railways and Posts and Telegraphs.

The respective contributions of savings from current consumption, domestic (internal) borrowing, external borrowing and deficit financing will be 4.6 per cent, 40.6 per cent, 10 per cent and 7.8 per cent respectively in the Seventh Plan. For the Sixth Plan period, the respective contributions of these avenues in financing the Plan stood at 36.7 per cent, 41.4 per cent, 7.7 per cent and 14.2 per cent. Thus, it is obvious that the intentions of the planners are to restrict deficit financing and to limit the internal borrowing to a reasonable levels while stepping up contributions from current savings through taxes, surpluses of public enterprises along with massive external inflows.

Private corporate savings

Over the years, private corporate savings showed a downward trend marked with ups and downs. The savings of this sector were 2.40 per cent, 10.33 per cent 2.51 per cent in the years 1952-53, 1961-62 and 1969-70 respectively Its share recovered again as the private corporate savings rose to 7.98 per cent of the total savings in 1974-75 but it dipped to 2.18 per cent in 1976-77 and 3.7 per cent in 1981-82. Apparently the performance of the corporate sector has been quite unsatisfactory While in developed countries, the private corporate sector contributes significantly to national savings, it lacks in India presenting a sharp contrast.

Deficit financing

The process of using deficit financing as a source of development finance began with the First Five Year Plan. In the First Plan, there was provision for Rs. 290 crores or 14 per cent of the total original outlay to be created through deficit financing. But the actual amount was Rs. 333 crores or 16.9 per cent of the total expenditure incurred in the public sector. There was little change in money supply during the first four years of the Plan During 1955-56 alone money supply had increased by 10.8 per cent. It is really difficult to establish any clear relationship between deficit financing and the general price level during the period of the First Plan. The First Plan left the impression that resorting to inflationary financing of economic development in India was by and large possible. The Second Plan targeted to raise Rs. 1200 crores or as high as about 25 per cent of the total financial provision through deficit financing on the basis of experiences of the First Plan. The actual total deficit financing amounted to Rs. 954 crores which formed 20.4 per cent of the total expenditure. The money supply rose at an annual average rate of about 6 per cent while the real national income increased at an annual average rate of 4 per cent during the period. The price level rose not only in those years in which the national income decreased but also in those in which it showed improvement. The Second Plan reversed the impression gained earlier. It was realised that inflationary financing would have to be exercised with guarded caution.

In the original estimate of the Third Plan, it was designed to raise only Rs. 550 crores that constituted only 7.4 per cent of the total outlay through deficit financing source. But the total deficit financing amounted to Rs. 1133 crores that formed 13.3 per cent of the total expenditure. The money supply went upward at an annual average rate of about 11.4 per cent. The rise in national income was at the annual average rate of only 2.2 per cent leading to an increase in price index during the five-year-period of the Third Plan. The deficit planning target during the Third Plan was more than double of the

original estimates. In spite of a large variety of controls, there was increase in price index due to external aggression, a fall in agricultural production during the period 1962-65 as also the uncertainty over the availability of foreign assistance. During the three Annual Plans (1966-1969), the Plan outlay was fixed at only Rs. 335 crores, constituting 5 per cent of the total expenditure. But the actual amount of deficit financing was considerably higher going upward to 676 crores that formed 10.1 per cent of the total expenditure during the period with 9 per cent increase in money supply.

The Fourth Plan had targeted to raise only Rs. 450 crores constituting 5.3 per cent of the total outlay through deficit financing. The actual deficit financing amounted to about Rs. 2060 crores that formed 12.7 per cent of the total expenditure. The money supply during the period increased at a phenomenal average annual rate of 15 per cent. The country experienced the worst inflation till 1973-74. The price index moved from 3.7 per cent in 1969-70 to 20 per cent during 1973-74.

The Fifth Five Year Plan had projected to limit deficit financing to only Rs. 1354 crores forming 3.4 per cent of the total outlay with a cautious step. But the actual amount was of the order of Rs. 3560 crores that is about three times of the original outlay. The money supply rate became as high as 18.9 per cent during 1978-79 The national income registered a fluctuating rise from 1.2 per cent in 1974-75 to 9.9 per cent in 1975-76. The Sixth Plan (1980-85) aimed at checking the supply of money and to that end, it projected for a small dose of deficit financing to the tune of Rs. 5000 crores that had formed 5.12 per cent of the total financial outlay. But the actual amount of deficit financing was sizeably more than the original projected one. For instance, the revised estimates from 1980-81 to 1983-84 put the overall budgetary deficit of the Central and the State Governments at Rs. 11017 crores as aggregate sum during the period. During 1984-85, the Central Government had budgeted for a total deficit of Rs. 1515 crores. During the period money supply too was rising consistently marking the highest rate of growth of money which was 16.1 per cent during 1982-83. In the Sixth Plan (1978-83), the deficit finance was mooted to be of the order of 3406 crores constituting 4.9 per cent of its total outlay. In the Seventh Plan, the uncovered resource gap of Rs. 14000 crore has got to be covered through deficit financing. In the opinion of some economists this level of deficit financing is deemed to be within the safe limits taking into consideration the current price situation and the trends in the economy. The Seventh Plan aims at a yearly growth in gross domestic product of 5 per cent and 4 per cent annual growth rate in agriculture sector. In view of the several bottlenecks in resource mobilisation esepecially from the international sources, it is held by several experts that the real size of the Plan would have to be slacked than projected. They are apprehensive of the fact that the constraints on resource mobilisation during the Seventh Plan would aggregate the spiral of inflation. Prof. S. Chakravarty had suggested the widening of direct tax base by bringing agriculture into the purview in pursuance of the non-inflationary development. The above discussion shows that deficit financing notwithstanding its mixed experiences has become a constantly concomitant ingredient of resource mobilisation in the country.

External assistance

Among the major members of the Aid India Consortium, formed during 1957-58, are the World Bank (I.B.R.D.) and its sister affiliate, the International Development Association and a number of individual countries including the U.S.A., the U.K., Canada, Japan, West Germany and other member-countries of the European Economic Community. About 90 per cent of the total external assistance. including loans, grants and commodity assistance utilised in India till the end of 1983-84 has come from the Aid India Consortium Fund. Our major donor, the U.S.A., has extended three types of assistance—loans, grants and commodity assistance under the PL 480 and PL 665 programmes while the I.B.R.D. have been arranging market loans at concessional rates of interest since 1949 and the I.D.A. provides loans free of interest. It imposes only nominal service charges.

Socialist countries

Since 1955, a number of socialist countries including the U.S.S.R., Czechoslovakia, Poland, and Yugoslavia have extended financial assistance to India, which till the end of 1983-84 amounted to Rs. 1563.3 crore. Among this group of countries, our major donor has been the U.S.S.R. which had extended a total assistance of the order of Rs. 1355.6 crore till 1984. On these loans, the rate of interest has varied between 2.5 per cent and 3 per cent only. Both the interest payment and amortisation are made in rupees

Other countries, such as. Australia, New Zealand, Switzerland, etc. providing assistance under different form like OPEC Special Fund, Abu Dhabi Fund, Saudi-Arabia Fund for development, Kuwait Fund for Arab Economic Development, etc., are very important. An aggregate of Rs. 1739.7 crore worth of loans had been authorised by OPEC countries to India till 1984.

The trend and magnitude of external assistance received during the Plan period presents us a mixed feeling. In the First Plan its magnitude was only to the extent of Rs. 189 crore which formed 9.6 per cent of the total actual Plan outlay of the public sector. In the Second Plan, it was of the order of

Rs. 1049 crore which constituted 22.5 per cent of the total public outlay. It was higher than the original estimate. In the Third Plan, the external assistance rose to Rs. 2443 crores accounting for 28.2 per cent of the Plan expenditure. In the Three Annual Plans (1966-69), it was to the extent of Rs. 2426 crores. Thus, it is obvious that the external assistance in our country was rising upto the Three Annual Plans. There was a declining trend from the Fourth Plan as its magnitude in the Plan was Rs. 2523 crore forming 15.3 per cent of the total outlay. The Fifth Plan resorted to external assistance to the tune of Rs. 2443 crore constituting 6.6 per cent of the Plan outlay. But the revised figure for the Fifth Plan (1974-79) rose to Rs. 5834 crore being 14.8 per cent of the Plan outlay. The Sixth Plan had projected to receive external assistance to the tune of Rs. 9929 crore which constituted about 10 per cent of the total public sector outlay of Rs. 97500 crore. The Seventh Plan has projected to resort to foreign aid to the tune of Rs. 18000 crore which constitutes 10 per cent of the total public sector outlay of Rs. 180000 crore. Thus the trend of declining foreign assistance is reversed after the Fifth Plan. The trend of rising foreign assistance is marked from the Sixth Plan. In the Seventh Plan, the amount of foreign assistance has been almost doubled when compared to the Sixth Plan though the percentage increase in these two Plans are almost the same (i.e. nearly 10 per cent).

Impact of foreign assistance

Foreign aid has made considerable contribution in increasing the productive capacity of agriculture through enlarging the potential capacity of irrigation projects. Foreign aid has played a crucial role for development of transport particularly railway rehabilitation in achieving self-sufficiency in terms of wagons, locomotives, rolling stock, etc. This helped with a sizeable contribution to industrial productive capacities in broadening India's industrial base. Foreign technical assistance has helped in providing expert services, training of Indian personnel and developing educational research and training institutions. With the aid, the public sector has been enabled to acquire the 'commanding heights' in the country. It is in this sense that foreign aid has played a significant role in the country's economic development.

Limitations of external assistance

Foreign aid has given rise to the vexing problem of debt servicing that has assumed a serious dimension in recent years. Debt servicing refers to interest payment on loans and the repayment of the principal when it falls due. The amount of debt servicing has grown rapidly from Rs. 23.8 crore during the First Plan to Rs. 3770 crore in the Fifth Plan and Rs. 3626 crore during the first four years of the Sixth Plan. According to a World Bank's estimate, the annual repayment would go up from $ 685 million in 1981-82 to $ 1645 million in 1985-86.

A larger share of external assistance goes towards the settlement of old debt, only a small part of the new loans contracted goes to finance the development programmes. The ratio of debt servicing to export earnings was as high as 10.6 per cent in 1982-83 whereas it was less than one per cent on an average during the First Plan. It has been further projected to peak around 20 per cent in 1987-88 and fall slightly thereafter.

In addition, foreign aid has been subjected to the "winds of political diplomacy' leading to uncertainty and unstable character. Its uncertainty adversely affected our foreign exchange position in 1965 and 1971 due to external aggression. The prices, quality specification, time of delivery and the choice of technique and technology most appropriate for the country may not necessarily be the best obtainable in the international market. A Columbia Study had pointed out that on an average the U.S.A. prices of capital goods wanted by India are probably 30 to 40 per cent higher than prices charged by other suppliers.

Out of the total aid of Rs. 31881 crores utilised by India till the end of 1983-84, Rs. 24633 crore accounting for nearly 77 per cent of the total aid was to be paid back in free convertible currencies. This involves double cost to the debtor country. The private enterprise economies have been generally reluctant to extend loans to India for the growth of public sector. The World Bank too is no exception to this attitude by and large.

In fact, India's experiences with regard to foreign aid has been a mixed one with its bright and dark sides. It has, therefore, become imperative for our country not only to pursue foreign aid with caution and expediency as a means of resource mobilisation for developing but also to strengthen its efforts to achieve the goal of self-reliance by giving impetus to our export industry as rightly exhorted in the Sixth and Seventh Plans.

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District rehabilitation centres for the handicapped

District Rehabilitation Centres are being opened in the country with a view to making available facilities for the handicapped persons in the rural areas also. Rehabilitation Council has also been started in the Ministry of Welfare to boost welfare of the handicapped. The Council, besides overseeing the effective implementation of the policies of the Government, will also co-ordinate the relevant activities.

Initially the District Rehabilitation Centres will be attached to the existing public Health Centres in the rural areas. Already more than half a dozen Centres have started functioning.

Environmental problems in developing Himalayan water resources

Jagdish Bahadur

In this paper the author outlines the importance of environmental problems associated with the development of water resources and emphasises the need to adopt a flexible approach for the conservation of natural resources so as to evolve an aesthetically attractive environment. He discusses some salient physical and conceptual aspects of hydrometeorological characteristics of the high altitude system of the Himalayas. He also highlights the need for an integrated development of the system.

THE CREATION OF A WATER RESERVOIR—may it be a modification of a natural lake or establishment of a new water body, involves four main stages of development process. There are feasibility studies, final design, reservoir completion and operation and maintenance. The initial period of the life of a reservoir is often characterised by extremely unstable conditions, when radical environmental changes can occur. Later stages are characterised by a gradual adjustment to the new conditions, which may then be stable or almost stable for longer periods.

Both the physical and chemical characteristics of water in man-made lakes vary with climate. The biological life depends even more on the climate. In view of the many variables such as general character of the reservoir, size, operation and water utilisation, geological, climatological and hydrological conditions, it is not surprising that the environmental repercussions are quite different in changing climate environments and individual reservoirs There are positive and negative feedback effects which change with time and location.

The necessary or desirable environmental investigations could be grouped under the following headings :

- (i) Reconnaissance studies (inventories of documents on present knowledge, pre-studies, detailed planning of main investigations).
- (ii) Main investigations to ensure a sufficient basis for predicting environmental effects of different projects—alternatives and for the decision-making procedure (physical environment, biota, landscape, economy, social conditions, minority problems, etc.).
- (iii) Documentation (studies and descriptions of important natural and cultural objects influenced by the measures-geomorphological, geological and biological objects ancient and recent cultural elements, etc.).
- (iv) The proposal of corrective or complementary measures, based on expected damages
- (v) Central studies to follow the changes caused by the project when realized and in the future.

The environmental impact assessment should answer the following questions :

- (a) Which aspects of the environment, natural processes and functions of the society are affected by the action ?
- (b) Which individuals or sections of society are affected ?
- (c) Can the effects be considered so predominantly positive or negative ?
- (d) Can the magnitude of each type of environmental effect be estimated and compared to the effect of similar activities in other projects ?
- (e) What importance should be given to each type of effect in relation to the other effects of the same projects ?
- (f) How do the environmental effects change with time ?
- (g) Can a negative effect be balanced by special compensating measures ?

The conservation or corrective measures aim at a functional and aesthetically attractive landscape with preservation of the original geomorphological, biological, cultural and scenic characteristics to the extent possible.

Himalaya and its river systems

Himalaya is the world's mightiest mountain system having 14 mountain peaks over 8000 m (asl) and hundreds over 7000 m (asl.) It extends through seven countries viz. the USSR, China, India, Bhutan, Nepal, Pakistan and Afganisthan. Several areas have not so far been accessible to man and still preserve their prestine beauty.

The Himalayas extend from 35°N to 27°N latitudes and 72°E to 97°E longitudes. It spreads over a length of about 2500 Kms. in east-west direction and a width varying from 200 to 400 Kms. in north-south direction. Normally, it is divided into three parallel longitudinal ranges: the *greater Himalaya* [average elevation of 6100 m (asl)] consisting the high fissipferous marine sedimentary rocks of different ages : the *lesser Himalaya* [average height of 2600 to 4600 m (asl)] consisting of crystalline and metamorphic rocks and the *outer* Himalaya [average elevation from 1000 to 1300 m (asl)] consisting of sedimentary river deposits.

The arcuate Himalaya mountain chains have risen against the older established river courses of the Indus, Sutlej and Brahmaputra. Emerging from the northern ranges and flowing longitudinally for several hunders kms. north of this barrier, these rivers now pass through deep antecedent gorges to the Indo-Gangetic Plains. Due to long intense forces of Alpine Himalayan orogeny, the old land surfaces have been changed completely. Simultaneously, the intermittent emergence and submergence of the land masses throughout the orogeny, the extent and configuration of the Tethys also changed but continued to be a zone of accumulation and sedimentation almost till Cretaceous (65 M.Y.). It is certain, during the intervening periods of tectonic episodes a series of cyclic landscapes were carved out. However, due to intense thrust movements, nappe structure, steep fault scarps and the present jagged terrain, it is difficult to establish the cyclic evolution of the landscape development. Nevertheless, from the shapes of the hills, plateaus and, the configuration of the valleys, presence of lakes and their lacustrine deposits at higher levels etc., it is evident that the Himalayan region has experienced several mountain building episodes during the late Cainozoic period (0-65 m.y.). The intermittent Pleistocene glacial activity and deep carvings due to river action are notable features of the Quarternary times (0.2 m.y.). Summing up, the modern Himalaya is a result of thrusts and vertical upheaval (cymatogenic activity) of the late Tertiary times (2-7 m.y.). The thrust sheets and overfolds are overridden by reliefs of earlier smoother planation of mid Tertiary age. The anticlines, synclines and other iosclinal folds so created have been carved and denuded by the now receding glaciers and large scale river erosion in the sub Recent and Recent times. The phenomena of uplift is still in progress and is marked by the frequent earthquakes. The lofty Himalayan system has thus been sculptured and present the beautiful scenery through a process of complicated phenomenon.

The princioal Himalayan river systems which receive glaciers melt contributions are listed below with their approximate mountain areas, glacier area and percentage glaciated catchment :

TABLE I

PRINCIPAL GLACIER-FED RIVER SYSTEMS OF HIMALAYA

No.	Name of River	Major River System	Mountain Area (Km)*	Glacier Area (Km)*	Percentage glaciation
1.	INDUS	INDUS	268,842	8790	3.3
2.	JHELUM		33,670	170	5 0
3.	CHENAB		27,195	2944	10 0
4.	RAVI		8,029	206	2 5
5.	SUTLEJ		47,915	1295	2.7
6.	BEAS		14,504	638	4.4
7.	JUMNA	GANGA	11,655	125	1.1
8.	GANGA		23,051	2312	10.0
9.	RAMGANGA		6,734	3	0 4
10.	KALI		16,317	997	6 1
11.	KARNALI		53,354	1543	2.9
12.	GANDAK		37,814	1845	4.9
13.	KOSI		61,901	1318	2.1
14.	TISTA	BRAHMAPUTRA.	12,432	495	4.0
15.	RAIDAK		26,418	195	0.7
16.	MANAS		31,080	528	1.7
17.	SUBANSIRI		18,130	725	4.0
18.	BRAHMAPUTRA		256,928	1080	0.4
19.	DIBANG		12,950	90	0.7
20.	LUHIT		20,720	425	2.1
	TOTAL:		1,001,294	25724	2.6

From the above figures, it can be seen that the mountain river systems of Indus, Ganga and Bhahmaputra are differently glaciated. The average intensity of mountain glaciation varies from 3.4 per cent for Indus, to 3.2 per cent for Ganga and to 1.3 per cent for Brahmaputra. The tributaries of these systems show maximum intensity of glaciation (2.5 to 10.8 per cent) for Indus followed by Ganga (0.4 per cent to 10 per cent) and Brahamaputra (0.4 to 4 per cent) but the average annual and seasonal flows of these systems give a different picture thereby demonstrating that the rainfall contributions are greater in eastern region while the snow and glacier melt contributions are more important in the Western and Central Himalayan region.

TABLE—II

Average Annual Stream Flows of Main River Systems

River System	Average Annual Streamflows (Km^3/Yr)
INDUS	206
GANGA	488
BRAHMAPUTRA	510

Hydro-meteorological traits

Himalaya—the greatest physical feature of the earth is Hydrometeorological traits climatologically one of the least known areas. No systematic data has been recorded for the high altitude region. However, recent serial surveys and availability of meteorological satellite have begun to provide information on clouds, snow cover, glaciers, avalanches, which has been helpful to develop a broad picture of climatology of Himalayas which is extremely complex.

The Hydrometeorological characteristics of the Himalayan environment are unique and arise from its very high altitude attracting both polar and tropical disturbances. The Himalayan range has a dynamical and thermal influence upon the midlatitudinal general circulation in the Northern Hemisphere and many believe that the Himalayan mountain affects the global climate

In general, there is a great variability in all the meteorological parameters observed in this environment of complex relief. The complexity of the relief features as well as differential effect of the weather systems in different regions are responsible for generating a variety of climatic patterns observed in Himalayas.

The precipitation over mountainous areas are governed by (i) direct uplift of the air, (ii) stimulation of convection, (iii) general storm precipitation and (iv) spillover. The direct lifting of the air by a mountain leads to adiabatic cooling which produces rain. In the case of stimulation, conditionally unstable air, on encountering a mountain slope, gets lifted up beyond its instability level, and causes convective precipitation. General storm precipitation from such weather systems as cyclones etc. produc precipitation from dynamic interactions which lea to convergence of air and cause consequent lifting In such cases, precipitation can occur whethe mountains are present or not. This type of precipitation is called the convergence component of storm precipitation. Spillover rainfall is the name given to precipitation that falls on the lee side after having been formed on the windward side and being carried by the wind stream on the lee side before it reaches the ground on the windward side.

The characteristics of precipitation are also influenced by increasing altitude (orographic precipitation) in three ways:

(i) The quantity of precipitation increases with altitude upto a certain level and decreases thereafter. The level of maximum precipitation varies greatly from place to place depending on local topography.

(ii) Average variability of precipitation generally increase with altitude.

(iii) On higher altitudes, the maximum precipitation occur generally earlier than on the foothills.

The Himalayan mountain system functions as a great climatic divide which exerts a dominating influence on the meteorological conditions of the Indian sub-continent to its south and the Central Asian areas to the north. In winter months, the Great Himalayan Range serves as an effective barrier to the intensely cold continental air blowing southwards from Siberia into India. During monsoon months, it forces the rain-bearing winds up the mountain to deposit most of their moisture on the Indian side. The studies conducted in the neighbourhood of Mt. Everest have shown that the rainfall regimes have pronounced monsoon character.

It may be interesting to note that the Meteorologists and Hydrologists in India have believed for a long time that the maximum precipitation in the Himalayas is obtained near Shiwalik ranges located at around 1200 m elevations and the higher regions are less precipitous but this is not the case. Recent investigations show that there exists no linear relationship between elevation and mean precipitation and the two could be best related by a polynomial of the 4th degree. No doubt, a maximum of rainfall occurs near the foothills of the Himalayas. As one proceeds northwards, the rainfall decreases until elevation 600 to 800 m is reached. The low rainfall region is located just on the lee side of the Shiwalik mountain ranges. Rainfall again increases northward until an elevation of 2000 to 2400 m is reached. Thereafter, precipitation decreases on the lee side of these ranges and probably a third maximum occurs on the windward side of the Grea

Himalayan Range (average height 6100m). Large precipitation in this range is self-evidently supported by the physical presence of the multitude of glaciers in this range. As a general rule, the level of precipitation has to be located fairly close to the equilibrium line and the annual precipitations are great even under extreme continental climatic conditions. Hence, we can surmise that the areas of maximum precipitation lie in the Great Himalayan Range.

Perhaps, the most important effect of the Himalayas for the summer monsoon in India is in the location of heat low over Rajasthan. This thermal low is one of the main controlling factors for the monsoon circulation in the lower levels of Indian sub-continent. However, recent investigations have pointed out the importance of a thermal high over the Tibetan Plateau for the monsoon activity. Whatever be the case, there is need to make extensive hydrometeorological observations on and over the Himalayan terrain to evaluate the energy and moisture balance both from water resources evaluation point of view and also the influence of the Himalayas over the phenomenon of climatic change. A large scope exists for the application of the Remote Sensing Technology and its potential should be more fully utilised and coordinated with ground truth observations for water resources evaluation using all other sophisticated technologies available to the modern man.

Peculiar problems in high altitude

The sites for water resources developmental projects in Himalaya are located in the proximity of or not far from the Main Boundary Thrust (MBT) in the southern front or close to Main Central Thrust (MCT) in the interior. Both these thrusts represent deep intracrustal tectonic planes of past movements of mountainous masses of rocks. The rocks are greatly deformed, fractured and crushed and the region is tectonically and seismically active. The creation of a dam alters the ecosystems. The upstream and downstream of the river reaches are modified due to alterations in hydrological regimes of the rivers systems affecting local inhabitants. It also creates some sort of imbalance in the status of natural resources both biotic (flora and fauna) and abiotic (soil, water, minerals) effecting the physical, chemical and biological aspects of the region, thereby creating sociological stress and distress to the local people.

The main problems peculiar to high altitude of the Himalaya are high intensity of glaciation, severe freeze-thaw cycle, sedimentation and seismicity.

(i) **High Intensity of Glaciation :** Himalaya constitutes the largest reservoir of snow and ice outside the polar regions and supports a multitude of glaciers. Himalayan glaciation is more intense as compared to Alps and Rockies. It is mainly due to their ultra high altitudes which compensates for its location at low latitudes. More than 15,000 glaciers covering an area of over 50,000 Sq. Km. drain into the Indian river systems.

The glaciers have a large variation in their size and are found to have occupied small recesess at high altitude to enormous iceflows which could rival those existing in polar circles. In general, the glaciers descending transversely to the strike of the mountain are shorter in length. Their snouts fluctuate more abruptly and they descend to lower levels (2150 m). On the other hand, the longitudinal glaciers, moving in a direction parallel to the strike, are less steep and less sensitive to the variations of snouts and they rarerly descend to altitudes lower than 3100 m. A coordinated study on glacial dynamics is being planned by the Department of Science and Technology to study the behaviour of glaciers and its surroundings.

(ii) **Severe Free-Thaw Cycle :** It has been observed that total incoming solar radiation at higher altitude is very close to that computed for the top of the atmosphere. The large fluctuations in temperatures results in creating a severe free-thaw cycle resulting in greater erosion of soil and rock formations. It is estimated that the rate of present erosion is 100 cm|1000 years compared to 21 cm|1000 yrs. in the past 40 million years demonstrating the seriousness of the problem for the region.

(iii) **Sedimentation :** The occurrence of landslides, soil creeps and slumping, the impact of waves generated on the large body of water during gusty rains and squalls causes bank erosion and aggaravates the problem of slope failure resulting in excessive sedimentation along with other improper use of soil resources It is estimated that the sediment yield of Himalayan rivers is about 16.4 ha-m|100 Sq. Km|Yr. which is about three times higher the value assumed by designers of the water resources projects. This may be so due to increased construction activity (e.g. road building, construction of canals etc.) and needs investigation.

(iv) **Seismicity :** Some of the largest known earthquakes have occurred in the vicinity of the Himalayan frontal area. In general, the strain energy release along the Main Central Thrust (MCT) appears to be more uniform and regular as compared to the Main Boundary Fault where large magnitude earthquakes have occurred.

The loading of water column of the reservoir does not produce enough stress directly but it can provide a trigger for induced activity. All-India Coordinated Project on the Study of Seismicity and Seismotectonics of the Himalayan Region has been initiated by DST during 6th Five Year Plan with aim at a better understanding of earthqake mechanism and to evolve better codes for construction of earthquake resistant structures.

Unique Himalayan region forms delicate eco-system having wide variablity in natural resources and several instabilities which call for a cautious approach for a regional development. What is therefore needed is a good data base and its updating with time so that effective ameliorative measures could be adopted in time for its regeneration.

Studies connected with mapping and modelling for optimal use of natural resources, integrated use of energy resources (solar, wind, thermal and hydroelectric) planned forestry and pastures, prevention and control of soil erosion, land-slides, mudflows and other natural hazards, development of water resources (including inter-valley transfer), exploration of mineralised belts should be undertaken in a planned manner.

Interactive dependence of highland with low land has to be appreciated in all earnestness for a comprehensive development based on scientific knowledge and a true spirit of collaboration by concerned countries for the welfare of the mankind.

Integrated approach involving planners, scientists and engineers from various disciplines in physical|chemical|biological|social sciences is required with particular emphasis to develop materials|products|equipment suited to the present and future needs of the people but largely in tune with the dynamic environment to preserve the prestine beauty of the great envirohment.

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Campaign for quality maintenance

A campaign to improve the quality and reliability of industrial products in the country is being launched in line with the recent policy measures taken by the Government to modernise industry. The States have been urged to draw up plans and work out strategy for the observance of 'Quality Maintenance and Improvement Month' in November 1986.

To give this campaign a head start, a National Industries Conference on quality control, productivity and quality assurance at National level will be convened in which concerend economic departments and organisations having greater role in ensuring quality will participate. □

Committee to consider mandatory use of Jute

The Government has set up an inter-ministerial Empowered Committee to work out mandatory use of jute in various sectors. The Committee will be headed by Shri Shiromani Sharma, Secretary in the Ministry of Textiles.

The Government has for quite sometime been considering various measures to protect the jute industry and increase the demand for jute goods, particularly for jute packaging materials. After considering all aspects of the proposals, it has now been decided that support to jute industry could best be extended through regulations making the use of jute packaging material mandatory for certain specified sectors. The setting up of an Empowered Committee is a step in this direction.

The Committee will finalise its recommendations within a month.

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Vigorous exploitation of Hydro-power potential

There is vast hydro-power potential in the north-eastern region, northern India, the Himalayan range and in the Nepal—Tarai region. So far over 15000 MW has been tapped and about 10000 MW capacity of hydro-power projects are under various stages of implementation Attention also needs to be paid to take up medium, minor, and micro hydel projects in order to make use of water of small rivers and rivulets which had not been utilised so far.

The Government has decided to streamline the clearance of power projects, introduction of new technologies, better techniques of monitoring and to provide adequate funds.

Emphasis is being laid to ensure that implementation of hydro-power projects do not result in environmental and ecological imbalances.

Guidelines have been laid down before a project is cleared for implementation. A comprehensive afforestation programme based on the detailed studies now forms part of the power projects. The Government has also laid emphasis on ensuring the speedy rehabilitation of the people affected in the project areas. □

Does Command Area Development need a second look?

N. K. Ray

The author here assesses and high lights the overall performance of the Command Area Development Programme during the last ten years. With the help of the case studies of major irrigation projects like Sarada Sahayak Project in U.P., Chambal in Rajasthan and Madhya Pradesh and Nagarjunasagar in Andhra Pradesh, he concludes "the programme has not been of much success in reducing the gap between creation and utilisation of irrigation potentials". He feels 'there is need for greater participation of farmers in managing the irrigation waters at minor outlet levels.

AFTER INDEPENDENCE, THE GOVERNMENT LAUNCHED an ambitious plan for increasing the irrigation facilities in the country through several major irrigation projects in various states. As a result of these efforts irrigation potential increased from 22.6 m ha before 1951 to about 68 m ha by the end of 1984-85. However, its utilization was not satisfactory. In 1951, the gap was only 0.86 m ha, which is now more than 5 m ha. Concerned with the delay in the utilisation of irrigation potential and with a view to having an overall development of Commands of major-medium irrigation projects and to increase the productivity, the Central Government initiated a programme of Command Area Development (CAD) in 1974. Till the end of 1984-85, the CAD programme covered a command of 18 million hectares through 105 projects in 18 states and the Union Territory of Goa. By this time the Central and State Government have spent a sum of about Rs. 1200 crore. Though the objectives of modernisation of irrigation system above outlets, construction of field channels, other on—Farm Development Works, enforcement of Warabandi. optimal cropping pattern, provision of inputs and credit facilities, etc., were envisaged under the programme, the implementation largely remained confined to construction of field channels in several projects. In this paper an effort has been made to give the overall performance of the programme during last 10 years. Case studies have also been given in respect of some important and major projects like Sarda Sahayak in U.P., Chambal in Rajasthan and Madhya Pradesh, Nagarjunasagar in Andhra Pradesh. Finally it has been concluded that the programme has not been of much success in reducing the gap between creation and utilisation of irrigation potential. Programme of integrated water management| warabandi has also not made much headway. The organisation needs restructuring and there is a need for greater participation of farmers in managing the irrigation waters at minor outlet levels.

Since 1950-51 a massive programme of irrigation development has been taken up in the country and several big and small irrigation projects have been successfully completed. However, the stress has been mainly on construction. The utilisation and productivity aspects have been lost sight of. As a result of this more than 5 m ha of irrigation potential out

of total potential created of about 32 m ha under major irrigation projects, remain unutilized. Financially, it would mean an investment of Rs. 10,000 crore. Moreover yield from irrigated areas remain at a low figure of 1.5 tonnes per hectare. To solve this problem, the Central Government initiated in 1974, a programme of Command Area Development (C.A.D.) in major irrigation projects of the country.

Objectives of C.A.D.

Objectives spelled out under the programme of C.A.D. are as follows :

- *Modernisation and efficient operation of the irrigation system as well as development of main drainage system beyond the farmer's blocks of 40 hectares.
- *Construction of field channels.
- *Construction of field drains.
- *Land shaping and land levelling with consolidation of holdings.
- *Lining of field channels|water courses.
- *Exploitation of ground water, installation of tube wells, etc.
- *Adoption and enforcement of a suitable cropping pattern.
- *Enforcement of an appropriate rostering system on irrigation.
- *Preparation of a plan of inputs like credit, seeds, fertilizers, pesticides, etc.
- *Making arrangements for timely and adequate supply of various inputs.
- *Strengthening of existing extension training and demonstration organisation.

Certain other programmes such as construction of roads, setting up of marketing and processing industries were to be kept in view but not at the cost of implementation of the above components of the programme.

Role of the states

The State Government were encouraged to set up Command Area Development Authorities (CADA) and initiate some basic physical works like detailed soil surveys, topograhical surveys, planning, designing and supervision of OFD works, extension and improvement of the water delivery system within the outlet Command, etc., in the selected commands by offering to share 50 per cent of the cost of certain items. A fairly large organisation was envisaged with adequate powers over all the development departments including the Revenue Department operating within the Command area, so that the future development could be well coordinated and orchestrated. The CADAs were expected to take a comprehensive view of the farmer's needs fulfilling the above objectives. Presently there are about 45 CADAs in 18 States and one Union Territory of the country covering 105 projects with Culturable Command Area (CCA) of about 18 m ha.

Central assistance on a matching basis was made available for the expenditure incurred on the establishment of the CAD Authorities and also a state level CAD Cell or Department, topographical|soil surveys, designing and supervision of OFD works, construction of field channels, enforcing Warabandi, subsidy to small and marginal farmers for OFD works|ground water development, purchase of equipment for land development and equity capital contribution to the Land Development|Ground Water Development Corporation set up by the State Government. It was envisaged that other items like the modernisation of the irrigation system, drainage, agricultural extension, infrastructure facilities like roads, regulated markets, processing industries, etc., would be taken care of by the State Governments within their normal Plan Programmes and the CADA would act as a catalyst for setting them up.

Since the inception of the programme in 1974 and till the end of March '84, i.e., during last 10 years' period, an amount of about Rs. 900 crore has been spent by the states and the central Government. The approximate physical benefits from this expenditure are :

TABLE—1

Physical Benefits from CAD Programme

Sr. No.	Item	Total coverage required (Lakh ha)	Area covered upto March 1984 (Lakh ha)	Achievement (per cent)
1	Topographical surveys etc.	150	75	50
2	Construction of field channels	150	73	48.6
3	Land levelling and shaping	45	14	31.6
4	Construction of field drains	150	11	7.3
5	Warabandi . . .	150	11	7.3

These figures relate to 76 projects only because additional 29 projects were included in 1984 only.

This would indicate that the main work done is that of construction of field channels. This has been possible because in this item full initial investment is available from budget funds and only 50 per cent cost is treated as loan to be recovered from the farmers. But in case of the states of Andhra Pradesh, Maharashtra, Karnatak and Madhya Pradesh, and now since October '84 in Gujarat also field channels are to be constructed at Government cost. There has been a little progress in the rest of the items like Land levelling, field drains and Warabandi.

Performance—some case studies

The performance of the programme on all-India basis has been described in earlier paras. Now the performance of the CAD programme will be illustrated by taking some major and typical projects. For this purpose following projects are selected :

(i) Sarda Sahayak Project in Uttar Pradesh,

(ii) Chambal Project in Rajasthan and Madhya Pradesh, and

(iii) Nagarjunasagar Project in Andhra Pradesh.

These projects represent large commands and typical problems. The Chambal project has been implemented under the World Bank assistance.

Sarda Sahayak Project

The project recently completed in the eastern part of U.P. aims at augmenting and extending irrigation facilities to 20 lakh ha of culturable command area (C.C.A.) in 14 districts. The C.A.D. project was started in 1973-74 and subsequently a C.A.D. authority was established in 1976, with the particular objective of increasing the utilisation of irrigation potential and productivity per unit of land and water through specific land and water management schemes. The organisational pattern is basically a broad structure in which the regional staff engaged on farm development work (O.F.D.), Warabandi maintenance and agricultural extension are placed under 13 Deputy Directors who along with Departmental Heads at headquarters level, work under the administrative control of the Commissioner-cum-Administrator of the Command Area Project.

Performance

The main activity under the project has been the construction of field channels. Under this programme, 0.66 lakh km of channels covering an area of 13.20 lakh ha were completed upto end of March, 1984. Out of this 5029 km of length has been lined. Under the Warabandi the progress has been quite slow, being coverage of 1.23 lakh ha of area against a total C.C.A. of 20 lakh ha. The other major activity taken up by C.A.D.A. is poultry development, goat and cattle breeding which are outside the objectives of CAD outlined by the Central Government. Little attention was paid to monitoring of agricultural|food grain production, productivity, use of inputs, coverage under high yielding varieties, and formulating of cropping pattern either at the macro or micro level. Efforts were lacking in respect of field drainage and conjunctive use of ground water with the result that serious problem of water logging started in an area of 4.64 lakh ha of the project command.

A total sum of about Rs. 85 crore has been spent during the last 10 years, but there is no significant increase in the utilisation of irrigation potential and in the productivity. For 1982-83, for which comparable figures are available, the potential created according to irrigation department of the State was 14.15 lakh ha, (gross area), the CADA completed field channels in a net area of 10.2 lakh ha against which the actual area irrigated was 7.18 lakh ha only (4.42 lakh an under Rabi+2.76 ha under kharif). Here it is worth mentioning that a net area of 10.2 lakh ha was covered under field channel and even by ensuring a cropping intensity of 130 per cent in the irrigated area, the actual irrigation of 13 lakh ha would have been achieved.

In respect of productivity, there has been an increase in respect of the average yield in the command as follows :

Crop	1974-75		1983-84	
	Area irrigated (lakh ha)	Yield average quintal/ha	Area irrigated (lakh ha)	Yield quintal/ha
Rabi	6.60	10.26	12.51	15.86
Kharif	0.97	6.82	2.27	11.74

These figures are not truly representative. Firstly, the figures are for areas irrigated from other sources also. Secondly, the increase in the yield is largly accounted for by increase in the irrigated areas. Moreover compared to the State averages the productivity remains lower than in the rest of the state as revealed by following figures .

For the year 1980-81 yield in quintals /ha

Crop	Sarda Sahayak Command	Whole State of U.P.
Wheat	15.50	16.40
Late Paddy	8.47	11.53
Early Paddy	9.69	9.86
Kharif food grains	8.45	8.91
Rabi food grains	13.96	14.62

Chambal Project

The Chambal river valley irrigation project with a command area of 5.5 lakh ha (2.30 lakh ha in Rajasthan and 3.2 lakh ha in M.P.) was completed in 1960. However by the end of 1973-74, in Rajasthan potential created was 1.74 lakh ha and its utilisation was 1.57 lakh ha, while in M.P. potential created was 2.73 lakh ha and its utilisation was 1.43 lakh ha only. Moreover, water logging problems developed and the productivity began to decline. With UNDP|FAO assistance the Government of India, Rajasthan and Madhya Pradesh undertook a research programme during 1967-72 to identify major agricultural constraints and then launched a remedial programme of Integrated Command Area Development which included, on-farm development, drainage, canal modernisation, etc. for this the assistance of the World Bank was sought and the two separate projects in Rajasthan and M.P. were taken up.

Rajasthan CAD Project

The project was taken up in December '74 and completed in March 1982. Following works were carried out at a cost of Rs. 78.60 crores.

Drainage	—1,67,000 ha
Canal lining	—53 km
Canal capacity works and structures	—1229 km
Canal control structure	—166 nos
O.F.D.	33,139 ha
Roads	—2097 km
Afforestation	—2285 ha

Separate institutions were created to implement the project which included the Command Area Authority, the CAD and water utilisation department and the Rajasthan Land Development Corporation. The major thrust in the project was to improve the drainage in the Command to control water logging condition. This was successfully completed. The other main objective was to carry out the On-turn Development works which included complete package comprising re-alignment of field boundaries, consolidation, land-levelling and construction of field channels and field drains. Total cost incurred was about Rs. 2500 per ha recoverable from farmers. On the whole, the project performance is reported as follows :

(i) The canal irrigated area increased from 1.58 lakh ha in 1975 to 1.99 lakh ha in 1979, cropping intensity from 125 per cent to 133 per cent and irrigation intensity from 70 per cent to 90 per cent. The crop yields in O.F.D. areas are estimated to be 20 per cent higher than the project area.

(ii) It could not be possible to enforce Warabandi to bring about a more efficient use and equitable distribution of water. Water user associations, which were expected to implement Warabandi, were not formed in most parts of the command areas, as farmers were reluctant to cooperate.

(iii) Irrigation in O.F.D. areas increased but not commensurate with the investment made as would be clear from the following figures :

Actual Irrigation in Catchment in ha

Year	Binayak-11	Dagalwada	Bajor	Dehit-A	Dehit-B	Dehit-C
1974-75	504	458	262	147	503	291
1975-76	430	560	310	144	488	291
1976-77	470	537	329	141	400	222
1977-78	577	546	331	170	415	218
1978-79	598	695	480	168	424	235
1979-80	616	443	455	348	276	265

(iv) It had been reported that water supply to the farmers of the lowest rung remained unreliable and inadequate. Benefits to them were not as equitably shared as intended under the project and that the farmers were still not confident that there would be more reliable water supply to other fields after implementation of OFD activities, be it because of the variable water flow in the main canal system or because of inequitable water sharing within the outlet command. As such they were reluctant to pay the higher cost of O.F.D. which is of the order Rs. 2500 per ha. There has been a poor recovery on this account.

(v) Since no maintenance had been envisaged under C.A.D. the drainage improvement system and field channels were liable to become gradually non-functional.

Madhya Pradesh C.A.D. Project

The C.A.D. project was taken up in September '75 and completed in March 1981. Following works were carried out at a cost of about Rs. 45 crores :

— Canal improvement works including pipe outlets aquatic weed control and drainage works,

— On farm development in an area of 5735 ha.

— Chak Drainage in an area of 28,000 ha.

— Roads in 440 km length.

On the whole, the project performance is reported as follows :

(i) The canal irrigated area increased from 1.51 lakh ha in 1975 to 1.89 lakh ha. Cropping intensity from 105 per cent to 127 per cent and irrigation intensity from 65 per cent to 74 per cent.

(ii) The crop yield has been as follows :

Crop yield (tons/ha)

Crop	Before project	Future without project	At completion of Project	At full development
Wheat (high yielding)	1.8	2.0	2.2	2.4
Paddy	2.2	2.5	3.2	3.5
Sugarcane	34.0	40.0	48.0	50.0
Pulsse	1.2	1.3	1.6	1.8

(iii) Water management studies under the project revealed high water losses and low irrigation efficiency which needed a second follow up project, costing Rs. 55.60 crores. The chak efficiency was low, being generally in the range of 20 to 40 per cent.

(iv) For O.F.D. works, farmers were reluctant on account of problems of land consolidation, and boundary alignment, and the cost of land levelling was relatively high. Consequently target in the project was reduced from 12,000 ha to 5000 ha only.

(v) It was too difficult to enforce Warabandi as Influential farmers resisted changes in the present water distribution system. Consequently tail end farmers could not get their due share.

Nagarjuna Sagar Project

The construction of the project was initiated in 1955. The dam has been completed. Construction of canals on right and left bank area is under progress. Irrigation commenced in 1967. The command areas to be irrigated are 4.75 and 3.97 lakh ha respectively. Separate Command Area Authorities have been constituted for right and left bank canals.

Programme

The C.A.D. programme was taken up intensively in the command area in 1974 with the objective of bridging the gap between the creation of irrigation potential and its utilisation, to help the small and marginal farmers in the tail end areas with assured, timely and disciplined irrigation and to initiate and implement measures for optimum and equitable water management, efficient use of land resources, regulation of cropping pattern and the like, all aimed to achieve higher levels of agricultural production and productivity. The major components of the C.A.D. activity undertakken are :

- Systematic Land Development.
- Integrated Water Management.
- Intensive Agricultural Extension.
- Construction of farm roads.
- Construction of field channels.

Organisation

The administrative set up at the project level comprises an Administrator of the rank of Superintending Engineer supported by Executive Engineer, Deputy Director Agriculture and Officers for Cooperation and Credit. The Administrator is directly responsible to the Secretary incharge of Irrigation utilisation and C.A.D. department at the state level. By the end of year 1983-84, bill for Comprehensive legislation on C.A.D was under consideration of the state legislature.

Performance

The irrigation potential created and utilised is as below :

Irrigation potential in ha

	Right bank canal	Left bank canal	Total
1. Ultimate	475,260	419,816	895,076
2. Created upto end of 6/83	413,213	297,621	710,834
3. Utilisation in 1982-83			
Kharif	321,367	134,388	455,755
Rabi	8,620	67,695	76,315
Total	329,987	202,083	532,070
Percentage	80%	68%	59%

Earlier, practice was to dig distribution system only upto the pipe outlet for a block of 40 hectares, the construction of field channels being left to the farmers. Subsequently in year 1977-78, it was decided to construct field channel at project cost upto the commanding point of each survey number or 5 ha block whichever is less To provide future relief to the farmers, particularly the small and marginal farmers, Government ordered in April 1981 to extend field channels at project cost to each holding. The progress in each command is shown as below :

Area under field channels in ha

Command	Total required	Progress upto June/83	
1. Right bank canal	475,260	419,200	88%)
2. Left bank canal (LBC)	419,816	291,000	(69%)
Total	895,076	720,200	(81%)

Other activities

	RBL Target	RBL Achievement upto 6/83	LBC Target	LBC Achievement upto 6/83
Warabandi (lakh ha)	4.75	0.20	4.20	0.31
Field Drains Not taken up so far				
Land levelling and shaping (lakh ha)	0 95	0 46	N.A.	0.44
Farm roads (km)	721	480	855	467

In addition programme of credit disbursement, agriculture extension etc., have also been taken up. The achievements and shortfalls can be summed up as follows :

(i) The potential has been created in an area of 7.10 lakh ha and field channels completed but the utilisation is only 5.32 lakh ha (59.4 per cent). The reasons attributed for lag in potential utilisation are stated as follows :

- Unauthorised conversion from Irrigated Dry (ID) to wet in the upper reaches, tail-end farmers not getting water :

— Craze of farmers for wet cultivation ;

— Uneven distribution of available supplies of water both above and below the pipe outlet due to lack of Warabandi|Irrigated Water Management.

(ii) The cropping and irrigation intensities have not been achieved :

Item	RBC	LBC
Cropping Intensity		
Before the project	100%	N.A
As per project report	157%	90%
Actual in 1981-82	130%	79.4%
Irrigation Intensity		
Before project		
As per project	140%	90%
Achieved in 1981-82	110%	65.5%

(iii) Average yield of crops (quintals|ha) have increased.

Crop	Command Area (CA)	Non Command Area	C.A.	Non C.A.
Paddy	41.62	30.09	39.23	33.93
Ground Nut	10.35	8.46	—	—

(iv) Water-logging has increased, prior to release of water in the canal in 1967, there were 6000 wells in the command area. After the introduction of canal irrigation the draft of these wells has been considerably reduced. The average water table in command area was 4.2 ms. below ground level in 1975 which has risen to 2.9 ms. in 1982. However, in the water-logged areas the water table was 2.22 metres in 1975 and 1.4 metres in 1978. In 1980 large areas in left Bank Canal Command have gone out of production due to water-logging and salinity. In 1981, the lining of canal began and water supply was stopped for some time. As a result, the depth of water table started receding. This clearly indicates that one of the possible ways of reducing water table is by stopping of supply for a certain period in a year and force the farmers to use ground water. The total area reported as water-logged is 57,000 ha and another 23,000 ha is affected by salinity in both the commands.

What should be done?

1. C.A.D. programme has now completed full 10 years and a sum of about Rs. 1200 crore has been invested, but the objective does not appear to have been achieved. Before the start of the programme in 1973-74, the utilisation of irrigation potential in the projects covered under CAD was 76.5 per cent, which has come-down to 72.0 per cent in 1982-83. In respect of productivity, when irrigation is introduced in any area the yield of crops normally goes higher (average yield 1.5 tonne|ha compared to 0.7 tonne|ha in unirrigated areas). The average increase reported in command areas fits within this trend largely. Figures for increase in yield rates in an irrigated area before and after introduction of command area programme are not generally available.

2. For efficient and equitable utilisation of irrigation water, an integrated programme of water management is essential. This programme has not been able to take much headway so far. Out of total CCA of 15 million ha, the area covered under Warabandi has been only 1.1 m ha which is only 7 per cent.

3. The present organisational set up of Command Area Development Authorities differ vastly from state to state, but no set up in any state has been able to deliver the goods effectively. It has suffered because of the non-availability of expertise in different disciplines and lack of coordination within the Authority and with other related organisations. Time has come to examine whether the concept of present set-up could continue with some modifications or altogether a new concept is necessary. However, an effective and uniform organisation is needed with accountability to the programme. A High Level Committee was set up by the Government of India in 1982, on this aspect. The recommendations of the Committee were accepted by the Centre and the States were requested for its implementation. The main recommendation was that CADA will be a wing of the Irrigation Department of the state and will be headed by a senior-level Secretary. Further, multi-disciplinary technical inputs should be available to the state irrigation departments and a new Water Management and Land Development Wing should be constituted in the department. Only a few states are reported to have accepted these recommendations.

4. In the present strategy of CAD programme there is a little stress on enlisting the cooperation of the farmers in the management of irrigation water specially below outlets. And so they feel alienated and pay little attention to maintenance and upkeep of field channels and field drains, and to the enforcement of Warabandi.. Effective farmers associations are a must below the outlet. Even at minor level there should be water cooperatives which could take the water from irrigation department in bulk and manage the distribution by themselves.

□ □ □ □

Tribal welfare through forestry

A new scheme for afforestation is being launched by the Central Government for the benefit of the tribal people from this year. A sum of Rs. 20 crore has been provided for the scheme for a period of five years, the proposed outlay for 1986-87 being Rs. one crore.

The scheme is to be executed through the State Governments, which will be required to make matching provision in their budgets. The scheme has been prepared on the Gujarat pattern, wherein each tribal family is given one hactare land for plantation.

It is estimated that India has 47 million hactares of non-forest wastelands and about 25 million hectares of crop lands with meagre and un-economic production. This land under the scheme is to be used for tree plantation.

Farmers' cooperatives for irrigation

(A case study)

Dr. Bishnu C. Barik

In this article, the author highlights the benefits of farmers' cooperatives for sharing water for irrigation. He cites the example of such a cooperative which is functioning at Mohini in the south Gujarat. He feels this experiment is "a welcome sign in the state of Gujarat, let alone the country".

IN THE LAST TWO DECADES efforts are made to push up agricultural development and growth to meet the gradually increasing demands of food for the teaming millions in India. Above all, increasing emphasis has been given for better water management to invite a change from traditional agriculture to a more scientific agriculture heavily dependent upon enormous use of HYV seeds, chemicals, fertilizers and modern appliances. But, unfortunately, although we are self-sufficient in food by now, our agriculture is by and large still traditional|primitive except in a few pockets, i.e., Punjab, Haryana, eastern U.P., Tamil Nadu and some parts of Gujarat where scientific agriculture is making headway. The backwardness in agriculture in large tracts persists mainly due to country's climatic and territorial conditions, coupled with diversity of culture encompassing largest number of illiterates and inadequate finance which in a way hamper the growth of agriculture.

Water management

Notwithstanding the above facts, whatever little progress in agriculture has been achieved so far is largely due to creative management of water utilisation and application (artificial irrigation by canals and water works) through the different innovative scientific methods like water co-operative, warabandhi system and water delivery on volumetric basis Thus, the need of the day is to utilise the available water resources in the cultivated area more scientifically to secure maximum crop per unit of water utilised. And at the same time the benefit of irrigation can help extend and cover as many farmers as technically and economically feasible. For instance, the irrigation potential which was only 9.70 million hectares in 1950-51 has gone up to 32.61 million hectares in 1984-85. The data available reveals that we have been adding nearly two million hectares of irrigated area every year for a decade or so. To achieve such a target is definitely a challenging job. What is needed in the system management is the active involvement and participation of farmers, the real beneficiaries who need to be thoroughly educated on efficient water management so that they gather confidence about the system. The pertinent question which seems to arise of course, true to Indian situation, is: why should the farmers actively involve themselves in the system jeopardizing their interest when the water supply is erratic and water never flows to the fields as per the requirement of the crop. In other words, what I intend to argue is that the farmers' involvement in the system can be successful provided the Government and its machinery discharge their function more efficiently and restore confidence of the farmers.

Why water cooperatives ?

The formation of a village water co-operative society by the collective endeavour of Mohini farmers

of South Gujarat is a unique example and is a welcome sign in the state of Gujarat, let alone the country. The purpose of illustrating the case here is not merely the propagation of the system that is in operation there, but also to throw light on and examine the system management. Any amount of lapse in discharging the function or discoordination leads to dysfunction in the system. In other words, in irrigation management, the farmer, the government and the concerned officers incharge have definite role to play. And proper co-ordination and discharge of functions by every party will definitely yield a better result for successful system operation.

The Sixth Plan document emphasized the formation of farmers association and their involvement in water distribution and management. Basically it had two aims. It was felt that it would reduce the distribution cost considerably and, secondly, it would yield a better performance with the reduction of interference of bureaucracy. It also points out that our land-holdings, which are very small and fragmented and spread over at several places, create baffling situation in delivery of water and as well as in collecting water charges. So it was the felt need of the day that the farmers should come forward to organise themselves and shoulder the responsibility of internal distribution of water and collection of water rent. It would no doubt help the government to charge the farmers collectively as per the water released at the outlet and metered.

Mohini cooperative

The Mohini farmers are progressive. The level of irrigation facility available and the fertility of the soil have made the farmers of this patch quite progressive. The farmers raise sugarcane, one of the most important cash crops, which exhibits preponderating green appearance in the three talukas of Surat district. Besides, the establishment of Sugar factories of different capacities by private and cooperative endeavour, particularly in the locality of Chalthan, serves as a ready market for the raw cane. It has further widened the scope of cultivation. Before the emergence of this co-operative society the erratic supply of water by the canal authority caused damage several times to the standing crops and the yield It created considerable frustration among the local cane growers. This, in fact, induced some cane growers to form a water co-operative, of course with the full co-operation of the government. The assurance of government indeed helped the patels, the dominant land-holding caste, to go ahead with the proposal. The general economic condition of patels, their entrepreneurial commitment to agricultural development and their educational attainment helped in understanding the problems of water delivery and organization and maintenance of not only canal works but also the harmonious relationship between the co-members, a pre-requisite for the long life of such a co-operative. Mr M. Rutten* describes "Patels of Gujarat best known as an advanced agriculturist-cum-entrepreneur class" for their deep interest in the business. It is noticeable by the mode of their farming, organisation, pattern of investment and life style. Bates** (1981) described "the change of mind of Patel community" by contrast the largely self cultivating lesser patidars ... endured these years with a remarkable resilience. Their wealth still lay in the skill of their hands and the land, and they depend on no one else for employment . it is arguable therefore, that we are dealing .... in this period (with) the start of a second revolution in cash crop production with the expansion of cultivation taking place on a much broader basis surpassing nineteenth-century development which had been funded to a great extent by Urban Saukars and superior patidars... the usser patidar peasantry after a period of retrenchment, forgo ahead until by 1937 in Borsad, the heart of the area in which they were dominant, they were able to command more credit than any other agriculturist in British Gujarat.".

The success of the co-operative

The Mohini Co-operative turned out to be a successful society due to strong co-ordination and maintenance of harmonious relationship between the different agents, i.e., the government, the bureaucracy and the farmers. The quality of leadership of Shri Bikhubhai and his colleagues further accelerated the process. The general educational backgrounds, the creative awareness and the courage to face the challenging situation among the patels, are the rare qualities they possess. At this juncture the active co-operation of the government is worth appreciating. Besides, the nature of mono-crop of the area did not, in fact, invite any kind of wrangle among the co-farmers which helped to unite the farmers more cohesively. The success can be seen as over the years the sugarcane area under irrigation has gone up over 85 per cent in Mohini command. The payment of dues by the society to government and individual farmers to society is highly satisfactory [(see Table-I), Shah 1986].

Role of the government

(i) The government will bear the losses in the initial years if any;

(ii) The government will, give grant of Rs. 25,000|- per year for two years.

(iii) The state supplied water on volumetric basis at a nominal charge 30 paise per

(continued on page 29)

* Social Profile of Agricultural Entrepreneurs: Economic Behaviour and Life style of Middle-Large Farmers in Central Gujarat, Economic & Political Weekly 1986.

** Nature of Social Change in Rural Gujarat, the Kheda District, Modern Asian Studies ,1981.

Harnessing ground water resources

G. Ravindran Nair

'The abundant water resource lying underground, if utilised, 'will come to play a singular role in providing protected water supply to the millions in rural India', says the author. But how long the underground water can last ? The author says, 'for the precious rain water to percolate to the ground to form subsurface water, we have to conserve our trees and our plant kingdom with meticulous care'.

AS THE BOUNTIFUL MONSOON kisses Mother Earth with all its titanic fury, part of the turbid rain waters run off to join the streams and giant rivers while a part of it settles down into the veins of the Earth to form the precious groundwater sources. Fifty per cent of the rainfall, however, goes back to wherefrom it came—the atmosphere—in what is known as the process of evaporation.

It is a marvel of nature that man has over the years hit upon sbsurface water even in the pores and cracks of rocks. This type of underground water is called meteoric. Since time immemorial, civilisation after civilisation, in different continents, depended upon the precious water under the earth's surface for drinking purposes.

Connate water

Fresh or salt water caught up in sediments during their deposition is called connate water. The water occupies the pores between the grains of sediments, the sedimentany rocks having usually been formed in water. Connate waters usually contain more mineral matter than other waters owing to the long contact with the minerals of the rock that entrap them. These waters are released from the underground reservoirs by drilling wells into the sedimentary rocks. Connate waters heated up during metamorphism or by igneous activity constitute the hydrothermal solutions which are responsible for mineral veins and hot springs.

In most humid regions in India loose rock formations and soils are saturated with water to about 25 m below the surface. This is the main supply of water for wells. The phenomenon called aquifers refers to the abundant water found in certain definite layers or formations usually sandwiched by impervious material. Water travels at a slow rate along such aquifers for long or short distances. While groundwater occurs in joint cracks and fault fractures, very little of it can be found in hard bedrocks.

Water table

Below a certain level all porous and fissured rocks are saturated with water. The upper surface of this groundwater is known as the water table. The water table is very irregular and generally follows the relief of the ground. It is generally much lower under the surface of the hills than of valleys because the water at the higher levels travels due to gravity to the lower levels. The water table is lowered steadily during long periods of dry weather and this is why many wells and springs go dry.

There are three zones of water table. In the zone of aeration water is not retained, but percolated through to the lower regions. There is a region lying between the highest level reached by groundwater during heavy monsoon and the lowest level to which

the water table sinks after a period of drought. This region is known as the zone of intermittent saturation. What is known as zone of permanent saturation extends downwards to the level below which no ground water is to be found. The depth at which the rocks are dry greatly varies according to the rock types and structures, but it is generally of the oder of 700 to 1,000 m.

Underground reservoirs

Rocks are said to be permeable if water can filter through them without any hindrance; such rocks may be porous like sand and sandstone or may be non-porous like granite, letting water to flow through them because of the presence of joints, cracks and cleavages. There are rocks that are impervious or impermeable and water cannot easily pass through them. Alternations of permeable and impervious strata, especially when folded and jointed, form natural underground reservoirs of water.

Who is not carried away by the matchless beauty of spring—that spectacular phenomenon of water under the surface gushing out into the open ? There are two kinds of springs : gravity and artesian springs. In a gravity spring, water is not confined between impervious beds, but flows from loose materials or open passages due to the action of gravity. Artesian springs or wells are those in which the water at depth is under sufficient hydraulic pressure to force it up to the surface. The porous sandstones of the Himalayan foothills provide ideal conditions for artesian water. Artesian conditions are also present along the fringes of the Narmada valley to the north of the Satpura range where water-bearing conglomerate beds are overlain by impervious crystalline rocks. Mining of lignite at Neyveli in Tamil Nadu posed special problems because of the prevalence of artesian conditions. Several pumps had to be installed to pump out large quantities of water which would have otherwise flooded the mines. Artesian wells are also quite common in Pondicherry.

As different from artesian springs are the ordinary wells dug or bored into the ground to a depth at which water-bearing permeable formations or fissured rocks are met with. Shallow wells dry up during dry seasons unless they reach upto the zone of permanent saturation.

Hot springs

Underground water is available to us in the form of hot springs, the water temperature of which ranges from warm to the boiling point. The rise in temperature is caused by ground water passing through recently erupted volcanic rocks which have not yet cooled to the normal temperature of the earth's crust. Water may also pass far enough below the surface to have its temperature raised by the general heat of the earth's interior and then rise to the surface under hydrostatic pressure.

In India

In India hot springs are to be found on the bed and banks of the Sutlej at Tattapai near Simla, in the Kumaon Himalayas around the Kamet and Nanda Devi peaks, Manikaran in Himachal Pradesh, etc. In Bihar, the thermal springs of the Monghyr district are spread over a distance of 50 km in a zone of faulting along the Kharagpur Hills. Bakreswar in the Birbhum district of West Bengal has a hot sulphur spring the temperature of which ranges between 53 degree centigrade and 72 degree centigrade. There is also a hot spring at Sangameshar on the western slope of the sahyadri.

Water entering the earth dissolves mineral matter. The amount of material dissolved depends on the distance the water travels, the kind of rock through which it has passed, the pressure and the temperature. Where the material is relatively soluble or where the water travels far down into the earth, much material may be taken into solution and the water becomes more or less highly mineralised. Such water when it flows out from the surface of the earth, forms a mineral spring which may be hot or cold. The mineral waters of such springs possess high medicinal value.

Harnessing ground water

With all set for providing villages with drinking water by 1990, it is quite possible that ground water will come to play a singular role in providing protected water supply to the millions in rural India. Already thousands of handpumps have sprung up in the rural landscape gushing forth precious water to slake the thirst of the hungry villages. Even for a steady supply of surface water we have to depend upon a copious rainfall to feed nature's aquifers, artesian springs and even ordinary wells. A long dry summer with scanty rain-bearing clouds would mean misery for millions as it so proved even in the rain-rich Kerala in 1983 when the south-west monsoon was very weak with most of the wells going dry or the water table plummeting to an alltime low. In the same way "for the precious rain water to percolate to the ground to form subsurface water we have to conserve our trees and our plant kingdom with meticulous care."

GATT and the third world

G. Srinivasan

International trade negotiations through the medium of GATT conference began in Uruguay in the fourth week of September this year. The author here analyses the outcome of the meeting especially the declaration adopted by it. According to him, the declaration not only underlines "the importance of improved trading environment for the alleviation of the debt problems of the developing countries, it also recognises the importance of concurrent action to improve the functioning of the monetary and financial system and the flow of resources to developing countries."

THE MOST AMBITIOUS international trade negotion since the Second World War was set in motion in Uruguay in the fourth week of September this year when Ministers of the 92 countries which subscribe to the General Agreement on Tariffs and Trade (GATT) gathered together to resolve crucial disagreements about how to reverse a rising drift away from free trade. While the 92 signatories of the GATT might be united in their belief that the GATT is the best and the only defence the world has against the spread of protectionism, they were divided on how the Agreement should be re-written to carry the open-trading system into the 21st century.

Defensive struggle

Before an analysis of the outcome of the meeting is attempted, it would not be off the mark to note that the trade ministers who met in Punta del Este (Uruguay) knew they were engaged in a defensive struggle to save the cardinal principles on which the GATT was established : that a concession to one party is a concession to all; that protection should be visible, temporary and non-discriminatory; and that grievances are judged and clinched in open forum. Their primary task was thus to restore the credibility and authority of the GATT. Only then can existing violations of GATT discipline be dealt with firmly and the process of liberalisation move ahead.

The GATT began life in 1948 as a treaty between rich nations regulating trade in goods by means of tariffs. It was the forum in which major tariff reductions were exchanged in successive rounds. The Tokyo Round, which ended in 1979, then moved on to a preliminary attack on non-tariff barriers and the first real participation of the developing countries. Today the developing countries comprise two-thirds of the membership of GATT and interests have begun to swing around a North-South axis. This has largely complicated the political task of preserving a treaty that is robust enough to ensure predictable market access for producers in rich and poor countries alike, but loose enough to recognise yawning disparities in economic development.

Agricultural trade crisis

Among the vital part of the agenda hammered out in Uruguay was the commitments to tackle a crisis in world agricultural trade. For Asian commodity producers the good news was an agreement to table agricultural export subsidies and farm-support policies for negotiation. Countries such as the United States, Australia, Argentina and Hungary joined together to

oppose the European Economic Community's common agricultural policy (CAP) which extends extensive subsidy to farming operations in the European continent. The Third World cheered on the free farm traders in their campaign to get rid of the subsidies paid by the EEC and even the United States on their farm exports. The subsidies sparked off trade wars for the control of third markets, from which developing countries were then dislodged. In a nutshell, both Europe and America have agreed for the first time to put their costly, inefficient and trade-wrecking policies on the negotiating table, including the 50 billion dollars of subsidies used to create and dump farm surpluses on satiated world markets. The document the EEC has signed contains cumbrous phrases about the "phased reduction" of the negative effects of farm support measures "and dealing with their causes". That means cutting the subsidies that supervene the surpluses and eventually distort trade. In this context, Punta del Este is likely to be remembered for the emergence of a third force in world agriculture in the form of the "free-trading" countries which no longer like to edge the developing countries out of their only major export avenue! The crux of the problem is the expensive and inefficient subsidy-centred grain production in the EEC and Japan. It is pointed out that Japan, which is a great champion of free trade, must give up its subsidy to rice farmers. This way, Japan's massive balance-of-payment surplus would ensure that Japan would have money to pay for grain imports. This would also in the process remove the subsidy element in the global grain market which depresses grain prices to the detriment of commodity exporting developing countries.

GATT and services

The issue of services provided a major obstacle to the new-round launch, with India and Brazil determined to oppose any inclusion of service in the GATT talks. To the developing countries, any exposure of their weak indigenous services sector, their banking technology in particular, to competition from developed countries is too heavy a price to pay. The developing countries genuinely fear that unrestrained Western competition could put their embryonic service sectors such as telecommunication, data processing and consultancy out of business and interfere with economic development programmes. The path to agreement was opened up when both India and Brazil agreed that services could be discussed in the negotiations provided they took place outside GATT auspices. This separation, they perceived, would preclude the West from blocking imports of Third World goods in retaliation for developing countries' failure to make concessions on services. As a result, a compromise was struck by proposing to launch the new round with ministers convened ad hoc rather than as GATT contracting parties. The negotiating group on services—for which GATT will provide the back-up facilities in common with other groups—will report to Ministers convened on the same ad hoc basis. Only at the end of negotiations will it be decided whether or not to incorporate the results into GATT rules.

The Minister of Steel, Mr. K. C. Pant, who was India's alternate leader for the Uruguay Ministerial meeting said on his return that in view of their relatively weak bargaining position, the developing countries had a real stake in maintaining and reinforcing the open global trading system. As part of this strategy of preserving the essentiality of GATT, a compromise was struck and India agreed to commence a process of negotiations on services outside GATT ambit and seek agreement on an international discipline covering this area. The compromise arrived at on services also effectively prevents cross-linkages or attempts to seek concessions by pitting goods against services by advanced countries which have a well-entrenched services sector. India and Brazil also successfully included the clause that the framework on services shall "respect the policy objectives of national laws and regulations and shall take into account the work of relevant international organisations."

Investment barriers

Yet another outcome of the GATT meeting was that trade negotiators would, for the first time, be empowered to examine the trade-distorting effects of barriers to foreign investment. Negotiators will also devise rules to curb piracy of intellectual property such as patents and trademarks and to restrain counterfeiting. There was agreement to negotiate on tariff and non-tariff barriers, textiles and clothing, tropical and natural resource based products, the operation of the "safeguards" mechanism which permits temporary import restrictions in advanced countries to protect threatened industries and subsidies.

Foreign trade experts contend that the impression that the third world is playing a bigger role in GATT remains to be tested against the objective benefits they had brought away from Punta del Este. To begin with, GATT's latest report showed that the export earnings of developing countries fell in value by 5.5 per cent last year, while imports were down by 6.5 per cent. Notwithstanding considerable efforts in some quarters, these countries have been unable to improve their lot in the face of rising barriers to trade. At the current juncture, these countries account for a 37 per cent of world trade, and if the 20 leading exporting countries are considered, third world countries come last of all on the list. If the innumerable impediments to trade could be eliminated, foreign exchange earnings could be increased by some 35 billion dollars annually which is roughly equivalent to 40 per cent of the interest paid by these countries last year !

Under these circumstances, it is pointed out that a breathing space is needed—and a strict observance of the commitment by Governments in Uruguay not to introduce new trade restrictions—to enable negotiators to gather in Geneva and organise the new

round. The new round is an attempt to renegotiate rules and to open markets in the three broad areas of agriculture, manufacturing and services. This must be done in a way that gives free play to the comparative advantages of North and South. Of the three areas, only manufacturing is systematically covered by GATT articles. But even the rules here are so twisted and distorted so much so that non-tariff barriers like bilateral deals, anti-dumping levies voluntary export agreements and export subsidies have been built around the rules to prevent developing country exporters from gaining access to markets abroad.

Halt protectionist measures

The eminent Indian economist Dr. Sukhamoy Chakravarty succinctly summed up the status of the third world countries in his introduction to a book "World economy in the mid-eighties" when he stated this "while the vision of a more equitable international economic order looks at the moment a distant dream, what is most disconcerting is that the decade of the 1980s has witnessed an alround retrogression" As such, a vital part of the process of Uruguayan Round of trade negotiation should be to reverse this retrogression by a strong commitment to halt all protectionist measures not consistent with the GATT and to dismantle existing barriers over the four years or more or negotiations. Looked at from this angle, developing countries are converging on areas of interest that have the greatest common denominator at the new round of trade negotiations. These could be described as (a) substantial liberalisation of trade in textiles and clothing (b) liberalisation of trade in agriculture, including tropical products, (c) proper settlement of the "safeguard" mechanism to preclude "grey area" measures in the future and (d) strengthening of the dispute settlement process in a manner that would compensate for the inherent weaknesses to developing countries.

Analysts opine that it remains to be seen whether the expressions of solidarity and determination which accompanied the compromise proposals put forth both by the developed and developing countries at Uruguay could be carried through to the negotiations themselves, due to begin early next year, and to last for four years. Slow economic growth in the West, mass unemployment in Europe and a growing U.S. trade deficit do not provide the most favourable milieu for major concessions to developing countries. The battle is ahead and the success to be scored also hangs in the balance for the third world countries, especially when the existing trading environment is inhospitable with its stress on "managed trade" and market-sharing strategies. All told, it would be germane to provide a gist of the declaration of the Ministerial Meeting of Uruguay. It falls into two parts. Part one establishes the objectives and principles for the negotiations on trade in goods. It provides for a standstill and rollback of trade restrictive or trade distortive measures so that the negotiations can proceed against the background of a policy commitment that governments would not increase existing levels of protection and will phase out their existing breaches of GATT disciplines. This is a crucial commitment because if selectivity, bilateralism, and discrimination become the norm, the very basis for a fair and efficient expansion of world commerce would be ravaged beyond redemption. The declaration also sets out the large range of issues in the area of trade in goods on which negotiations would take place. A group on negotiations in goods has been set up to supervise and conduct the negotiations and will report to the Trade Negotiations Committee.

Trade in services

In part two of the declaration, Ministers have taken a decision to launch a negotiation on trade in services and set up a group on negotiations on services, which shall likewise report to the Trade Negotiations Committee. This decision has been taken by Ministers as representatives of governments because it was considered that the negotiation on services shall not be placed within the legal framework of GATT. While this has been hailed by developing countries as a sound compromise solution, the statement made by GATT's Director-General to the Development Committee of IMF—World Bank on October 3 in Washington should evoke renewed concern in view of the fact that he had observed thus : "Ministers have nevertheless agreed that the negotiations on both goods and services shall be treated as one policy undertaking and GATT practices and procedures will also apply to the negotiations on services". This shows that when the parallel track negotiations on services are over, developing countries cannot but accept the "reality" and be prepared to confront the onslaught of technologically-superior Western services industry making momentus inroads into their domestic markets! While the declaration notes the importance of an improved trading environment for an alleviation of the debt problems of the developing countries, it also recognises the importance of concurrent action to improve the functioning of the monetary and financial system and the flow of resources to developing countries". That way, GATT has openly sought other multilateral institutions such as the World Bank and IMF to devise "appropriate measures against the current economic conjuncture" in which the developing countries have wittingly or unwittingly found themselves in.

Decentralisation of decision-making shows encouraging results

DECENTRALISATION OF DECISION-MAKING PROCESS, it is recognised, makes administration a fit instrument for social and economic transformation. The package, announced by the Prime Minister soon after he assumed office, includes enforcement of accountability, simplification of rules and procedures, prompt and courteous service and setting up of effective machinery for redressal of public grievances.

A number of steps have since been taken by the Ministries to translate these measures into action. As a result of decentralisation and delegation of powers now the service has improved is illustrated below :

Regional Licencing Authorities (RLA's) in the Import and Export Organisation have been authorised to issue advance licences upto (i) CIF value of Rs. 25 lakhs where input-output norms have not been fixed, and (ii) CIF value of Rs. 1 crore where input-output norms have been fixed.

Powers of RLA's to deal with applications for capital goods have been raised from Rs. 20 lakhs to Rs. 25 lakhs and those of the ad hoc committees in the office of Chief Controller of Imports and Exports from Rs. 50 lakhs to Rs. 1 crore.

As a result of these measures, the rate of disposal of import applications and cash assistance applications has improved. In 1983-84, a total of 3,90,999 applications were received and 3,77,500 disposed, leaving a pendency of 13,499. Out of these, 1125 were pending beyond time limit. In 1984-85, the number of applications had gone up to 4,51,218 and the disposal was 4,38,531. Applications kept pending were 12,687, out of which 867 were beyond time limit.

Enhanced powers have been delegated to the Director General, All India Radio and Director General of Doordarshan to sanction schemes|projects upto the value of Rs. 1.5 crores each. Similarly, their powers to sanction estimates for civil work have also been raised from Rs. 1 lakh to Rs. 2 crore.

This has quickened the process of clearance of 16 A.I.R. projects involving an amount of Rs. 10.68 crores during the period May to August, 1985, obviating the need for going to the Ministry for scrutiny and sanction. Besides, 60 civil works involving an amount of Rs. 19.63 crores were sanctioned at the level of D.G. during March-August, 1985. Earlier, examination of such cases in the Ministry took 45 to 60 days.

Powers of the Company Law Board under Sections 211, 212 and 213 of the Companies Act have been delegated to the Regional Members of the Board. Similarly, certain powers of the Board have been delegated to the Regional Directors and from Regional Directors to the Registrars of Companies. These have facilitated quick decision on applications; the number of applications which will now be decided by the Regional Directors and the Registrars of Companies will be around 30 and 2500 respectively.

Powers have been delegated to Ministries to finalise recruitment rules for Grade 'C' and 'D' posts without consulting the Department of Personnel and Training. Earlier all such proposals were required to be sent to the Department for advice. As a result of this the number of such proposals received has come down from 238 in March, 1985 to 111 in June, 1986.

Monetary powers of claims settling officers in the Railways have been enhanced, e.g. Chief Commercial Superintendent|Chief Claims Officer : from Rs. 40,000 to Rs. 60,000; Additional Chief Claims Officer : from Rs. 25,000 to 40,000 etc.

As a result of greater delegation of powers and streamlining of prosedures, the number of claims settled has gone up as indicated below :

Settlement of loss and damage claims	1984–85	1985–86
(a) Number of claims settled	5,09,976	5,32,184 (+)2.39%
(b) Number of claims paid	1,68,810	1,82,295 (+)7.99%
(c) Number of fresh claim cases	4,55,461	4,24,031 (—)6 90%

(The decrease in fresh claims cases was on acount of more intensive claim prevention measures).

(d) Number of pending claims cases	84,919	41,261 (—)61.41 %

(This has been achieved on account of better claims prevention and better claim settlement measures. The stipulated target of disposing of claims cases within 42 days was achieved).

(e) Number of new suits	29,616	26,969 (—)10.5%

(This drop was on account of more satisfying claim settlement work done from customers' point of view).

(f) Number of suits pending	64,420	57,771 (—)10.33 %

Sanctioning of pensions to various categories of Defence personnel has been decentralised among CDA, Allahabad, CDA (Navy), Bombay and CDA (Air), New Delhi. This will eliminate delays in the sanctioning of pensions.

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(continued from page 22)

10,000 litres, leaving the society as its discretion to charge the farmers on the crop area basis at the scheduled rates in the command.

(iv) The department took the responsibility of maintenance of sub-minors and field cannals for free flow of water course. The department also spent nearly Rs. 3|4 lakhs for this technical correction.

Role of the Society

(i) The society takes the responsibility of distributing water below the measuring point, not above. Maintenance of field channels below the outlet is the responsibility of the concerned farmers, not that of the society.

(ii) The society takes the responsibility of payment of water charges and is answerable to the government for the delayed payment, if any. Society has formulated its own norms and laws for conflict settlement, deferred or delayed payment and misuse of water if any.

(iii) The society has its own independent staff which consists of one Manager, one Mistry, one Clerk and one Patkarh (Waterman). The salary of the staff is paid by the society.

(iv) Apart from processing applications, the society maintains a daily record of released water. area irrigated cropwise and farmwise. A consolidated report on daily utilisation of water is sent to the department fortnightly.

TABLE I

Year	Members	Share-Capital in Rs.	Net profit in Rs.
1978-79	145	7,900	17,000
1979–80	161	9,000	3,000
1980–81	181	10,000	6,000
1981–82	187	11,300	10,403
1982–83	203	11,100	7,331
1983–84	212	11,550	9,651
1984–85	216	11,800	8,445

□ □ □ □

Revised Indian standard for bio-gas plants

The Indian Standard Institution has recently brought out a revised Standard for bio-gas plants. In the revision. apart from capacities, design and structural details. two popular types of bio-gas plants, namely, floating drum and fixed dome types, their comparative merits, calculation procedure for selection of capacities, gas distribution pipeline connections and the performance tests for bio-gas plants have been covered.

Although the Indian bio-gas technology is more than three decades old, one of its redeeming features is the continuing search for models which are cheaper and easier to construct. Studies by agencies like IIM, Ahmedabad have shown that the reliability of the bio-gas plants has been rising over the years and with it the confidence of the villagers in the working of these plants. The availability of the revised Indian Standard could not have been more timely in promoting this confidence and making available plants that are more reliable in comparison.

Bio-gas technology, by recycling and making scientific use of organic wastes, yields manifold benefits. It provides cheap fuel and high quality fertilisers. Even small bio-gas plant reduce the loss of forest wealth and misuse of agricultural and cattle wastles. It helps keep the environment clean, provides gas for cooking, lighting and motive power, and brings about a qualitative change in the family and community life of the rural population, especially that of the women and children.

Rehabilitating the handicapped

M. I. Habibullah

Vocational Rehabilitation Centres have been opened by the Government all over the country for the physically handicapped. These centres provide vocational training to the handicapped in commercial lines, radio assembly, cutting and tailoring, carpentary, etc. The author here highlights various functions of the VRCs in enabling the handicapped to become self-reliant and also suggests further steps to improve their operation.

WITH THE DAWN OF INDEPENDENCE, Government of India launched a massive welfare programme for all sections of society in the country including the handicapped. Realising that the handicapped are part of the weaker sections of the society, the Government included the "HANDICAPPED WELFARE" in the nation's Five Year Plans. To begin with, the Government established the First Special Employment Exchange for the Physically Handicapped in Bombay in 1957 to provide jobs for all categories of the handicapped (the blind, deaf-dumb and the orthopaedically handicapped). The Government increased the number of these special employment exchanges for the betterment of the handicapped over the years After establishing the special employment exchanges, then, as a second step, the Directorate General of Employment and Training (DGE & T) under the Union Labour Ministry set-up two Vocational Rehabilitation Centres (VRC) for the Physically Handicapped, one each at Bombay and Hyderabad in June, 1968, with an extensive co-operation of the Health and Education Department of the United States of America to provide vocational evaluation and adjustment training to the handicapped to facilitate their early rehabilitation. The formation of the first two VRCs received whole-hearted response from the handicapped as a result of which the Government established another 12 VRCs in different states. All these 14 VRCs are located at the following key stations for all-round rehabilitation services of the handicapped :

1. Ahmedabad (Gujarat), 2. Bombay (Maharashtra), 3. Bangalore (Karnataka), 4. Bhubaneswar (Orissa), 5. Calcutta (W. B.), 6. Delhi, 7. Hyderabad (Andhra Pradesh), 8. Jabalpur (M.P.), 9. Kanpur (U P.), 10. Ludhiana (Punjab), 11. Guwahati (Assam), 12. Madras (T. N.), 13. Trivandrum (Kerala) and 14. Jaipur (Rajasthan).

Services

The VRCs admit the handicapped of all the categories. The handicapped are now classified into five groups, i.e., blind, orthopaedically handicapped, deaf-dumb, leprosy-cured and the mentally retared (Mild). The last two groups have been added recently in the handicapped category. At the VRC, thorough care is taken to evaluate them vocationally, medically assess their residual capacities and measure them psychologically by the Rehabilitation Officer and the Psychologist respectively. Moreover, the handicapped are interviewed to ascertain their personal, social, family and economic back-grounds which often cause adjustment problems. They are then put through various psychological tests to assess their intelligence, aptitude, manual dexterity, personality and other adjustment problems. The handicapped are given necessary counselling and workshop training (according to their educational qualifications) to adjust them in their work habits and motivate them to take decision in personal and vocational fields.

Types of training

The VRCs have Five types of work-shops for different types of handicapped clients according to their educational qualifications, as under :

(a) Commercial Section which imparts training in the field of Hindi typing and shorthand and English typing and shorthand. This training is only for those who have passed matric.

(b) Radio Assembly section.

(c) Metal Section.

(d) Cutting and Tailoring (C&T) section.

(e) Carpentary & cane making section.

All these workshops have an expert instructor in each section.

Objectives

The aims of imparting above training to the handicapped include :

(a) Vocational Evaluation and Adjustment Training.

(b) Assessment of medical, social, psychological and vocational rehabilitation needs.

(c) To assist the handicapped clients in developing workable rehabilitation plan and refer them to appropriate agencies|organisations for rehabilitation and utilising the community resources.

(d) To demonstrate to the handicapped that they are also capable of competing for open employment.

(e) Work for developing greater co-ordination among different rehabilitation agencies organisations.

(f) To promote the rehabilitation services and develop the community responsiveness to rehabilitation programmes.

The Vocational evaluation and adjustment training for one month from the date of admission (the handicapped person should be in the age group of 14—40 for admission) and after that he|she may be sent to some (out-side) Industries|Workshops|Offices for on-the-job evaluation|adjustment|In-plant|apprenticeship trainings up to one year. The VRC also registers the name of the handicapped for suitable employment after the completion of one month evaluation training.

Skill Training

To bridge the gap between evaluation and rehabilitation, the DGE&T has sanctioned the skill-training workshops at six of the fourteen VRCs, located at Ahmedabad, Bombay, Bangalore, Hyderabad, Madras and Trivandrum. The skill training workshops impart training in certain trades like electrical, electronics, general mechanics, air-conditioning and refrigeration, automobile engineering, printing, bookbinding, arts & crafts, textiles, cutting and tailoring, secretarial practices etc., depending on local needs.

Rural rehabilitation extension centres

The Far-flung rural handicapped cannot take benefit from the VRCs as they are located in the cities|towns and therefore, the DGE&T set-up Rural Rehabilitation Extension Centres (RREC) at the five VRCs of Bombay, Calcutta, Kanpur, Ludhiana and Madras to cater to the needs|training facilities of the rural handicapped people. The main purpose of the RRECs are :

(a) To locate the handicapped persons in need of rehabilitation services

(b) To provide orthetic|prosthetic appliances for the genuine and needy handicapped.

(c) To render services pertaining to training and employment|self-employment etc.

(d) To guide them in proper way for his|her betterment for training, further study (technical|academic) and to recommend their case to a particular institution|Office.

(e) To offer any other services, which they may require to make them independent and self-supporting in the society.

Each VRC looks after 11 blocks of rural area through mobile camps and the DGE&T has proposed to extend this RREC schemes to other VRCs also.

What VRCs do

1. After completion of one Month evaluation period, the VRC provides a stipend of Rs. 100 and also provides hostel facilities, if needed, by the handicapped client.

2. The VRC provides free medical check-up when approached by the handicapped.

3. Assistance in procuring financial aid for the purchase of :

(a) Tri-cycles and wheel-chairs,

(b) Artificial limbs, orthetic and prosthetic ambulatory aids,

(c) Typing, sewing, knitting machines, etc.,

(d) Braille books and braille wrist watches.

Assistance

The VRCs help the handicapped in getting :

(a) Finance for self-employment through the

nationalised banks under D.R.I. (Differential Rate of Interest) scheme without any surety.

(b) Arrangements for job-orders and helping in marketing the finished-goods in the markets.

(c) Recommendations for the admission in the ITIs|CTI|ATI|BTC|Polytechnics and other educational institutions.

(d) Recommendations for the allotment of Telephone Booths (PCOs), Scooter|car| cycle-stand contractorship.

(e) Recommendations for the handicapped seeking jobs in Government, public-sector, private sector offices|workshops|factories etc.

(f) Recommendations for the handicapped for allotment of shops|kiosks and milk-booths for self-employment through the concerned development authorities.

5. The VRC provides a monthly stipend of Rs. 170 for in-plant training (up to one year) and an additional amount of Rs. 70 also paid, if he|she is stayed in the hostel attached to the VRCs.

6. Evaluation of work potentiality of each handicapped client by:

(a) Rehabilitation Officer.

(b) Psychologist.

(c) Workshop experts|technicians.

(d) Medical Boards.

The overall incharge of the VRCs are "SUPERINTENDENTS", under group 'A' post (Class-I).

How VRCs be improved

1. The VRCs are entirely meant for the handicapped and therefore, the maximum number of staff of the VRCs should be handicapped so that they could treat their handicapped brethren and expedite the works on the spot.

2. The instruments, i.e, typing machines, and lathe machines etc. of the VRCs are not always in perfect order and the Officers are not taking pain to repair them and therefore, the handicapped clients fail to learn anything from the VRCs during his|her evaluation period.

3. The Officers of the VRC should pay attention to the all-round development of the handicapped instead of indulging in in-fighting for the sake of power and prestige.

4. The DGE&T bosses at Delhi should pay surprise visits to VRCs to ascertain the working capacities of the Officers and their attitude towards the handicapped.

5. The services of 14 VRCs for 22 States and 9 Union Territories is just like a pop-corn to an elephant's hunger and therefore, the number of VRCs should be increased with immediate effect. The services of the VRC is very badly needed in places like Andaman-Nicobar and Lakshadweep Islands to cater to the needs of the handicapped community.

6. Most efficient and talented handicapped persons should be inducted into the 'Advisory Board' of the VRCs so that they could really work for the cause of the handicapped.

7. The VRCs should help in abolishing application fee for the handicapped job seekers and also make arrangements for pre-recruitment coaching facilities on a par with those being provided to the SCs & STs, for Staff Selection Commission, Union Public Service Commission, Banking Exams. etc. etc.

8. The Vehicles of the VRCs (Metador Van|Car| Jeep) should be utilised entirely for the handicapped and in no way should be misused for personal use of the officers of the VRCs, as this oral malpractice is going on in all the VRCs. The DGET should stop this menace.

Performance of VRCs during the year, 1985

Particulars	Blind	Deaf-Dumb	Ortho.	Leprosy cured	M.R. (M)	Total
1. No. o Clients at the beginning of 1985	67	57	455	44	6	629
2. No. of clients admitted during-1985	1772	1748	15135	319	228	19202
3 No of clients evaluated during—1985	1695	1654	14511	327	214	18401
4. No. of clients left the centres without completing the evalution period	65	31	473	20	5	594
5. No. of clients still under evaluation at the end of - 1985	79	120	606	16	15	836
6. No. of clients rehabilitated during-1985.	429	498	3885	135	43	4990*

Definitions: 1. Ortho. · Orthopaedically handicapped
2. M.R.(M): Mentally Retarded (Mild)

Reserved for Readers

Birth defects

I have been a regular reader of YOJANA for last one year. Many thanks for starting this regular column. You have provided us a chance to make our contributions through this column.

Regarding article 'Why these birth defects?' authored by Dr. Ishwar C. Verma which appeared in September 16-30, 1986 issue, data used in this article were based on hospital-based studies. But in rural areas situation is quite different. Diet is one of the important reasons of birth defects in rural areas besides genetical and environmental causes. Lack of knowledge, lack of proper facilities and superstitions are also causes of birth defects there. I think immunization against tetanus is not the only measure to avoid birth defects as author has indicated in the article.

Dhruva Ahluwalia, Muzaffarnagar

Public sector

I read the latest issue of Yojana (September 16-30, 1986) with deep interest. As you can well imagine (being myself connected with the public sector) I read the article on the public sector with great care. I realize that you have maintained a balance between different points of view. However, YOJANA ought to have several more articles on this subject—vast and immediately relevant to us in philosophic and economic terms.

A. Ranganathan
Tamil Nadu Warehousing Corpn
MADRAS

State of agriculture

I am a regular reader of your magazine, and find it of real work.

Take last month's September 1-15, 1986 volume's the article "Why this growing industrial sickness" by Mr. Sanjay Baijal was an excellent piece. But the first your articles become embombed to a single topic and hence one or two of these could have been replaced effectively by some more interesting topic.

However, as you had advertised that you are opening a column "Reserved for Readers", I am giving below a few lines in which I have tried to depict the present state of the agricultural set up of the eastern regime of our country.

Ours is an agricultural set up. We claim of having made long strides since our Independence in the field of agriculture. We compare ourselves with the best of the international standards, and we are true to our claim when we look towards Punjab, Haryana and U.P. But alas ! had we taken a look at Orissa, West Bengal, Assam and Andhra, we couldn't have dreamt of making such claims. We find our eastern farmers toiling behind their ancestral bull for providing their family an odd meal. While their northern counterparts have a big hand in the country's development year by year, breaking the previous records. The farmer's ability to feed their families is diminishing. Certainly it has been the fault of the farmers as they anachronically drudged behind and never had the initiative of taking to the scientific methods. Except using fertilisers they have not deviated from their ancestral way of agriculture.

It's high time that the Government took bold steps to bring about green revolution in this highly fertile belt of India. Millions of rupees have been spent in propogating modern sceintific techniques which can help farmers a lot, but mere giving advice will do no good to them. They are to be spoon-fed. Unless they are guided and helped in all possible ways, they can't prosper. After all a man can never hope to win a dual with a weaker left-hand.

M. A. Sufian
Regional Engineering College, Rourkela.

Yojana depicts change

Recent edition of Yojana (English), as I read depicts planned 'socio-economic change of Indian life'. The articles presented by this organ of Indian Planning Commission is an authoritative reference guide to researchers, scholars and students of various faculties I can only suggest the name of 'Kurukshetra' next to it. The editing and printing are commendable as it does not claim any of the stereo-typed government publications. I hope the fortnightly will come to my hands with vivid features, case studies, colur transperancies on rural development and anti-poverty programmes.

Kallara South, Kerala
Kallara South, Kerala

Growth-oriented plan for petro-chemical industry

The National Committee on Perspective Planning of petrochemical industry has recommended the setting up of Petrochemical Promotion and Development Authority (PPDA) to identify and support the development of basic petrochemical and their end products.

The Committee feels that if various inputs are made available to the industry at international level, it would be possible for Indian petro-chemical industry to be comparable and competitive with international plants in terms of technology, efficiency of operation cost.

The Apex Committee with Shri D. V. Kapoor, Former Secretary Chemical and Petrochemical as Chairman, has formulated a long term integrated growth-oriented plan for petrochemical industry.

RURAL ELECTRIFICATION TARGETS OVERSHOT DURING 1985-86

TARGETS OF VILLAGE electrification and pumpset energisation were surpassed in the country during 1985-86 when 18,595 villages were electrified and 3,84,863 pumpsets energised against the envisaged 17,799 villages and 3,65,380 pumpsets. It was for the second year in succession that the number of pumpsets energised under the assistance of the public enterprise, Rural Electrification Corporation, crossed the three-lakh mark in a single year. The Corporation approved during the year 1,454 projects in 19 States involving financial assistance of Rs. 330.74 crore. It disbursed financial assistance of over Rs. 380 crore, the highest ever in a single year. The Corporation earned a net profit of Rs. 16 19 crore during the year as against Rs. 13.32 crore during 1984-85.

The Corporation also recorded an all round progress in its performance by further accelerating its efforts in reaching out electricity to far-flung villages. As much as 93 per cent of the total villages electrified and 87 per cent of the pumpsets energised in the country during the year were under projects financed by the Corporation.

Under the projects approved and financed by the Rural Electrification Corporation more than 1.90 lakh villages and over 21 8 lakh pumpsets have already been energised upto the end of March 1986.

The Corporation continues to pay special attention to backward and tribal areas and Harijan bastis. As many as 4,531 tribal villages and 12,549 Harijan bastis were provided with electricity during 1985-86. Efforts to minimise inter-state and intra-state imbalances in matter of rural electrification are continuing. Nearly 80 per cent of the total villages electrified during 1985-86 were located in States below the all-India average in village electrification.

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What it would be like in 2001?

NEXT ISSUE

Role of domestic Savings

Automatic air pollution measuring stations to be installed

Five automatic multi-parameter air pollution monitoring stations are to be opened in India. Three of them will be in Delhi and two in Calcutta. This is envisaged under a bilateral agreement between India and the European Economic Community The EEC is to provide aid amounting to Rs. 112 lakhs for this purpose

The three stations in Delhi, being installed in co-operation with All India Institute of Medical Sciences (AIIMS), will be operative by June-July 1987; whereas the two stations in Calcutta, likely to be installed in association with the Centre for Study of Man and Environment (CSME), will be operative by October-November 1987

These stations will monitor the ambient air quality day and night and will be able to forecast the quantum of the air pollution. With the data provided by these stations, it will be possible to measure their effect on human health and preventive measures to be taken.

These stations, being installed on turn-key basis with the help of German consultancy, will work as model stations, suitable for learning and assimilating the highly sophisticated air pollution monitoring technology, based on which other stations also will be opened.□

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What it would be like in 2001 ?

Pushpa M. Bhargava

Why should we at all think of what it would be like in 2001 ? If we are able to assess realistically what is possible as against what is likely, were we to let things drift on their own, we might make the 'likely', 'possible' and then prepare ourselves for it.

What'd we like it to be ?

Let us first assess what we would like it to be in 2001 on a global basis. Let us try to paint a picture of the 21st century Utopia against the background of the 20th century; it is bound to be different from the original Utopia of Thomas More. It is not unreasonable for us to expect the following :

— The basic requirements of all individuals in respect of water, power, housing, clothing and food are met. We are here not asking for what is obtained today in the wasteful societies of the West. An electric tooth brush is wasteful of energy. A society in which obesity (due to over-consumption of food) is a national problem, is clearly wasteful of food. Having a sea-side villa which one uses only for a month in the summer every year is surely a sign of affluence, and affluence always has an element of wastage in it. We are not asking for all this. We are only wishing for those conditions to be obtained in regard to the above-mentioned basic requirements of man which would allow an individual to live in dignity, not affluence.

— Everyone has equal access to education right from the beginning.

— There is no unemployment, and opportunities exist for all to optimise expression of their internal capabilities.

— Everyone has equal access to the best available medical and health care.

— The prevalent economic order is international and equitable.

— Individuals are not able to use money alone to make more money for themselves. Their income represents a just wage or remuneration for the quality|quantity of their effort.

— There is no exploitation of man by man for personal or class gain.

— An individual is able to engage in socially useful and productive work as long as he| she can; in other words, there is no fixed retirement age. However, when he reaches a stage that he cannot work, he is protected by social security.

— There is equitable social justice.

— Distinctions based on caste, creed, sex, age or nationality have ceased to exist.

— There is freedom of expression and belief, and no one is victimised for his personal belief as long as he refrains from using violence and as long as his beliefs do not compromise the legitimate freedom and dignity of other individuals.

— Physical torture of one individual by another has ceased to exist.

— The law keeps pace with time, becomes more international (and less parochial) in character, is implementable and is implemented.

— There is freedom from fear of war and deescalation of the arms race has started with the prospect of total disarmament in view.

— It is recognised that disputes shall always arise, but the world has found peaceful ways of solving disputes at all levels-from the individual to the national-which would preclude physical violence and war.

— Terrorism and crime for crime's sake has been wiped out so that we are able to live in a society where personal safety is ensured to a degree that it ceases to be a matter of concern.

— Corruption in public life has been wiped out

— A culture has developed where wastage and expression of opulence is held in check for fear of widespread public condemnation.

— The world has adopted a new information order in which collection, dissemination and receipt of information is not the monopoly of only a minority (as it is today).

— The survival of the human race has been ensured by elimination of the fear of war, appropriate and adequate protection of the environment, and control of population.

— The sources and effort, liabilities and assets are shared on a global basis.

What is possible by 2001 ?

Utopia, by definition, is unachievable. For, on the way to its achievement, new knowledge is generated which multiplies and/or extends the original goal, and the cycle continues. That is one lesson of history.

Even if we were to muster all our resources on a global or national basis, the basic requirements of all individuals in respect of water, power, housing, clothing and food. are unlikely to be met. Intensive instead of extensive agriculture may be a solution to the food problem for the enhanced number by 2001. This would mean putting in all the resources into naturally endowed areas and employing much fewer people than is the case today in agriculture, for others, alternative employment would need to be found. This, however, is not going to be socially or politically acceptable. Even, if there is enough food and clothing available, low purchasing power of a large proportion of the population around the world would prevent people from obtaining what they need to satisfy their minimal requirements.

Similarly, the resources that can be mustered even under the best of circumstances, would not allow enough and adequate housing to be made available for all those who have barely a roof-or no roof- over their head as of today, And, one has to worry about the addition to the world population by 2001.

As regards water, it is primarily a question of management and control of water resources. One would need to evolve measures to control flood and drought. This would take time, and one would have to recognise the relationship between water conservation and parameters such as environment (for example, deforestation). Even the best strategy cannot yield results as, unfortunately, enough information is not available. It would take time to gather this information.

As regards power, judicious combination of new strategies (such as microhydel and energy plantations), biogas (for places such as schools, and not for home use, in villages), nuclear power, cutting down of transmission losses, and full utilisation of installed capacity, can probably allow a quantum jump in power production around the world so that by the turn of this century, power is not a limiting factor for development.

In connection with the basic requirements, it should also be remembered that, for some problems such as the problem of water and power, the solutions have to be local (that is, within the country); for others such as food, solutions can be international. The world's food problem can certainly be solved by the turn of this century, even taking into account the inevitable increase in population, if it is dealt with at a transnational level and food production and resources are pooled. But we know that this is not going to be possible. Indeed, it is an irony that while, theoretically, problems to which transnational solutions exist, are easier to solve than those for which only national solutions will have to be devised, practically speaking solutions to the latter category of problems may come about earlier than to the formar category. However, it should be possible to ensure that by the turn of this century we are well set on the road towards solution of the problems that I have mentioned above, which would allow us to take care of the basic requirements of all individuals all over the world sometime early in the 21st century.

In my perception, education, along with water and power, is at the top of the hierarchy of problems. In other words, if we do not solve the problems of education, water and power, no other problems can be solved; and if we do take care of education, water and power, other problems will sooner or later take care of themselves.

What we indeed wish in regard to education is that, by the turn of this century, every child who should be in school (classes I to X) is actually in school, that the quality of education has improved along the times that I have discussed elsewhere. that every child

has identical opportunities provided to it by the State, and that these opportunities are sufficient to allow the child to realise his potential through the school system. Even with the best of intentions and everything being ideal, this objective will take a minimum of two generations to furctify from the date we begin and we haven't yet begun.

Adequate employment, equalisation of opportunity, and optimal expression of one's inherent capabilities can come about only when we have fulfilled the minimum requirements in regard to water, power and education, and the population has stabilized. I would predict that the stabilisation of population where it continues to increase today, will take at least ten years probably twenty-after the universalisation of school education and ensuring that the quality of education has improved.

As regards health and medical care, it is certainly possible to provide a minimum of medical and health care to everyone around the world by the turn of this century, and to wipe out certain diseases such as polio, malaria, cholera and tuberculosis. It should be possible by 2001 to establish the efficacy or otherwise, of a large number of indigenous drugs used in various traditional systems of medicines, to produce the effective drugs cheaply, and incorporate them in the modern pharmacopoeia. It may, however, not be possible to eliminate by then nutritional deficiencies, disorders of the gastrointestinal tract and related malabsorption disorders. If there is genuine, concerted international effort, it should be possible within the existing international situation to drastically reduce disorders of the eyes, including infection and blindness, by the turn of this century.

In regard to the rest of the 'desirables' mentioned in the preceding section, I think all is possible by 2001.

What's likely to happen ?

I have outlined in the preceding section what is possible, given the realities of the situation. What, then, is the difference between what is possible, and what is likely? Let us take a specific example. Total disarmament is not possible within the next ten years, but a substantial reduction in arms and declaration of the arms race is certainly possible within this period. Whether or not that would happen, would depend on a somewhat fine interplay of factors-facts of life as one might call them—the results or the outcome of which interplay cannot be exactly predicted. But one can make an intelligent guess, and that is what we mean by 'likely' in the context. In this particular case, my intelligent guess would be, "probably not" It is ultimately the question of effort. When we say that something is possible, it means that if effort is put in, that can be done. To determine what is likely to happen, one has to in the final analysis, assess as to what is the kind of effort that we, on the global scale, are going to be able to put in—or would even want put in. Let us, therefore, look at what is likely to happen by 2001 as against what is possible.

Our present policies are not need-based but based on political expediency. They are not based on the application of the scientific method or on professionalism, but are based on adhocism and amateurism. This is compounded by the goals of the political machinery around the world. The goal is rarely, if ever, the progress of mankind as a whole.

We have said what is possible, that is what can be achieved step by small step, starting from today, by 2001, and what cannot be achieved even if everything that is possible is done because some things are simply not possible. But, will we take all the steps in the right direction ? The answer is probably not, neither in our country nor elsewhere. Reasons : selfishness, narrow-minded nationalism, parochialism and vested interests. They will act as a weight on the lid. We would probably take a step or two : attempts will be made to open the lid but it is extremely unlikely that, by 2001, the forces from below the lid will overcome the forces on the top of the lid. Eventually, the lid would be thrown open; the question is when ? I would imagine by about 2040 or so-between 2030 and 2050. That is when the ultimate choice will be made; that is when the human race would decide of its own volition to live in peace and harmony according to a recipe something like what I have given above, or to destroy itself the last individual.

In other words, I do not believe that much of what I have stated as possible in the preceding section, will actually be accomplished by 2001. We will drag on, a little bit will be done here, a little bit there—not because we want it to happen, but because it could not be helped. Some good is always done inadvertantly even by the greatest of tyrants, just as some mistakes are made inadvertantly even by the greatest of men.

The epilogue

This is not an essay in pessimism or frustration Inspite of what I have written above I am optimistic, because I have trust in people if not in their leaders; because I have trust in the wisdom of those who have suffered, if not in the generosity of those who have been privileged. □

Remodelling villages, a challenge

Dr. Ram Krishan

The author here examines the rural life and feels that remodelling of villages is a stupendous task and unless people are pursuaded to think and work collectively for creation of local resources for rebuilding their villages, progress would be extremely slow. According to him, "the central point is the political will to decentralise power, authority and resources to local institutions/bodies to assume responsibilities for local development. It has also to take up responsibility of training their leaders to assume responsibility for improving their villages".

DESPITE 39 YEARS OF INDEPENDENCE, the face of villages in India, except to some extent in Punjab, Haryana and Kerala has not materially changed. The cities are expanding at the cost of villages. Inspite of slums and other disabilities, they are assuming a look of modernity and prosperity while villages generally present a depressing look and dilapidated economy. For various socio-economic reasons the people in villages with surplus income are shifting to cities and investing their capital there. The youth whether educated or uneducated tend to migrate to cities in search of job and generally settle there leaving their old parents behind. This has led to socio-economic tensions in the rural and urban areas apart from depriving the villages of the youths who could usher in development.

Existing situation

The pattern of houses in the villages has not changed much over the past several decades except for some pucca rooms and frontages, here and there. The houses are generally compact, congested and arrayed in a line. Generally constructed with mud or unbaked bricks with tiles, thatch or mud roof over them. The walls, thatch and roofs all bear smothering effects of weather specially of rain, storms, and hail. A process of sub-divisions of a house continues as families expand or break and most of the houses become small thatched tenements without ventilation, without proper opening to the road and without sanitary arrangements. The cattle are kept in open, verandah or courtyard under very dirty conditions and the residential accommodation and animal sheds become a part of a small mud construction.

There is no drain on the roads and there is no planned drainage from the courtyard to the lane. The house drains empty some times in shallow pits put directly on lanes in most of the cases. In the rainy season and even otherwise, they overflow on the lanes causing muddy and unhygienic conditions. The lanes generally become unpassable during rains. On the whole, the dwellings lack ventilation, adequate living space, sanitary latrines and proper dranage of kitchen waste water. This leads to insanitary conditions resulting in large scale incidence of T.B., diarrhoea, dysentry, jaundice, etc.

Ponds are a common site in each village. They absorb in their bosom all wastes washings of houses, cattle barns, fields and waste water from wells and

hand-pumps. They generally peep into the village abodes acting as breeding grounds of mosquitoes, snails and nematodes and a large number of worms causing diseases in humans, crops and animals. Majority of the people defecate in the open. The exposed excreta is exposed to flies which are carriers of various diseases. It is also washed during rains to ponds infecting them with worms and bacteria present in the excreta

Most of the drinking water wells are located around ponds. Their surroundings are dirty. The waste water from them as well from hand-pumps percolates below and is a continuous source of contamination of under-ground water specially in villages with high water table.

The cattle and human refuse are stored in heaps which rot and release methane and other gases continuously contaminating the atmosphere. During rains, the following rain water carries away the refuse to ponds and rivers contaminating them. Waterlogged conditions around ponds, jheels and water pools are also conducive to breeding of mosquitoes, snails, and worms.

Drainage is completely lacking or is poor in a large number of villages due to the fact that development of the village is undertaken without a plan and without comprehending the effects of an isolated project. Bad drainage is making such villages endemic areas for various transmissable diseases and is leading to lower output per unit of land and per person and cattle.

People in villages are generally found to be infected with hair lice, houses are infected with bed bugs, flies, mosquitoes and rats which except rats are suckers of blood and transmitters of diseases.

All the above conditions and the fact of migration of educated persons from the villages are draining the energy of the people, sapping their vitality and enfeebling their will and idealism. A general sloth, passivity and indifference to life is noticeable in the villages inspite of a series of development plans|schemes introduced by Government. Surplus resources, if any, generated are not being invested in productive enterprises in the villages but are siphoned off to the cities or towns where return is safe and investment becomes a status symbol.

Strategy for development

Construction or replanning of houses in ever five lakh villages in India is a stupendous task. The requirements of resources in term of building materials, finances, technical guidance, organisation, extension, education, etc. are enormous. The Government has neither the money nor a suitable agency to undertake by itself yet this is a sector which can be neglected no longer. It has vast employment potential. The objective of health for all b 2000 A.D. can not be achieved without healthy an sanitary environment in the rural areas withou improving the nutritional levels of the people an without generating a will 'To Live Better' in th rural areas. It has therefore, to be a package fc better houses, sanitary conditions, increase i incomes, improvement in social conditions and prop education of the rural people. The Government hа a crucial role in providing the necessary administra tive and technical back-up to the programme and ensuring a coordinated and integrated approach c behalf of a number of departments to be involved i the programme.

It can not be a programme of constructing ne bastees though some new bastees may come up the process. It can not be an engineering depa mental venture though the help of engineers a architects will be required. It has to be, in princip and in practice, a people's programme to be e ecuted by the people with some assistance of t government and local bodies.

Our villages as structured at present have undergo major remodelling if some semblance sanitation and proper living is to be achieved. Mo vation of people through village leaders and existi village institutions, viz. school, cooperatives a panchayats at the village level and correspondi institutions at the block and district levels, is t key to success for remodelling villages even on modest scale. This is by all accounts a stupendo task. Government does not have the necessary sources to lift villages from the existing mora Unless, therefore, people are pursuaded to think a work collectively for creation of local resources rebuilding their villages, progress would be extrem slow. The slogan has to be generation of local sources through individual and community effc which may be supplemented by governmental effc in terms of technical guidance, materials and fund

The central point is the political will to dece ralise power, authority and resources to local in tutions|bodies to assume responsibilities for lc development. It has also to take up responsibi of training their leaders to assume responsibi for improving their villages.

For improving environment and giving a new l to the villages the entire process of planning for lages would need to be reoriented. Schemes IRDP and N.R.E.P. aiming at providing emp ment are not adequate to change the life pattern villages. Based on experience over a continu span of time, the author would like to offer the lowing suggestions for a new deal to the village the country.

1. Housing :

People live in houses for a large part of the and night and, therefore, environment in and aro

houses effects their lives a great deal. Attention to their improvement is, therefore, very important. Besides improvement of existing houses, new complexes would also need to be constructed to eliminate over-crowding and accommodate increasing population. The housing policy has to be tailored to the income levels of individual households and within this parameter the specifications of houses have to be designed to meet the needs of the people.

Remodelling of existing houses

Remodelling or replanning of houses is much more intricate and difficult than constructing new houses. In a situation of overcrowding of Chullahs' is a single household, separate accommodation is necessary for some families near their present residence. No Government can assume the entire responsibility of remodelling of existing millions of houses and yet it is a job which has to be tackled. Proper ventilation, sanitation, cleanlines of surroundings, drainage of water, proper disposal of house wastes, non-leaking roofs, sanitary latrines, etc. have to be provided. The Government have to create an atmosphere and enthuse people to remodel their houses themselves with some assistance in matters of loan, subsidies, if any, supply of controlled materials and other materials needed for construction nearer the villages besides technical guidance.

The remodelling can not be a uniform or one go' affair. The financial capacity of the beneficiary, his requirements in relation to size of family, etc. and his motivation will decide the pace and process as well as the time frame of remodelling of houses. The remodelling cost of houses has to be different for different economic groups. It would vary according to taste, space and standard of improvements desired by the house owners. It will not be economic to have a separate government agency for execution of the programme. The official agencies can help in preparation of designs, estimates for remodelling and requirements of the building materials near the village. People would like to remodel their houses in phases and, therefore, the programme would have to be phased out over a period of time.

The following steps are recommended in this respect :

(i) Removal of all encroachments of land along roads and lanes through pursuation if possible and through legal processes, if necessary.

(ii) Providing facility of long term loan for remodelling and new constructions at a low rate of interest. The scheduled caste and scheduled tribe people are expected to get it at D.R.I. of 4 percent.

(iii) Arrangements for supplies of construction materials :

(a) Bricks—A brick kiln should be started on the roadside in each village by the Gaon Sabha. The land for this should be earmarked by gaon sabhas during consolidation operations.

(b) Cement should be supplied by Government at controlled rates at Block Headquarter. Other building accessories such as sand, grit, doors, iron and steel, windows, ventilators, nails, screws, pipes, bolts etc, should be supplied by opening a shop at the block headquarter or near the brickkiln.

(c) Supply of ready-made and prefabricated building components. Training of masons, carpenters, plumbers, electricians and blacksmiths of the village or nearby villages in building construction and manufacturing building requisites.

The existing houses will have to be improved gradually for which the following priorities are recommended :

(a) Conversion of existing old latrines, if any, into PRAI type latrines. If there are no latrines, new PRAI type latrines be constructed.

(b) Making kitchen floors pucca and having a smokeless 'chula'.

(c) Making cattle-shed floor pucca and constructing pucca urine preservation, and compost pits for storing house garbage, surplus dung and farm wastes and covering them with earth.

(d) Water supply through installing deep bore hand pumps on community basis.

(e) Use of ventilators.

(f) Making other rooms pucca.

(g) Making floors of rooms pucca.

(h) Making other rooms pucca.

(j) Using waste-proof compounds and devices to reduce dampness in houses.

Emphasis to be put on the use of prefab parts and local materials, minimising investments, labour saving and phased implementation.

Loans and subsidies should be made available for effecting improvements. For people below the poverty line, the loan and subsidy should be in the proportion of 25 : 75, for medium income group people 50 . 50 and for higher income group people only loans. Subsidy should always be in kind. The maximum total limit for loans for category I, II and III people should be Rs. 3,000, Rs. 5,000 and Rs. 10,000 respectively. They may, however, differ from area to area.

Constructing new housing colonies

As population increases, there would be demand for new houses, Some of the combined families would also like to bifurcate due to family quarrels or due to requirement of additional space.

New houses depending upon availability of resources could be constructed in one lot or several lots. Construction of new houses has to be carried out in phases. Just one or two rooms with a window and a ventilator in each room, courtyard, PRAI type latrine, purer floors and kitchen, smokeless 'Chulah' and water supply are some minimum necessities which could be constructed to start with. More rooms may be added as resources become available. Use of prefab parts need to be encouraged.

People's participation

A substantial programme of remodelling existing houses and building new houses can not be taken up without people's participation. To ensure their participation, a Committee for remodelling existing houses and establishing new colonies should be formed in each villages. The Committee should consist of some members of the Gaon Panchayats and other persons interested in the activities. Representatives of women, youths and poor sections of the village, should also be on Committee. This committee should be taken on a study tour of places where schemes for remodelling and construction of new houses for all shades of people living in the village have been successful. A discussion should be encouraged to suggest technical design and parameters to suit local available materials. A balance would have to be struck by marrying traditional and modern constructional designs keeping costs in view.

Housing should be treated and accepted as industry and the aim should be durable and clean houses comparatively immune from the weathering effect of rain, hail, and storm. The housing industry in the rural areas if properly allowed to develop can create enormous employment potential in several fields.

In our cities housing construction is a lucrative business of the big housing organisations which are both public and private. In our villages improved housing is a mirage. For even a modest beginning, the Government should adopt a policy in which building materials are available nearer the villages at controlled rates or more or less on 'No loss and no profit basis' by government controlled corporations which should ensure free technical guidance and services of an architect besides supplying prefab building accessories.

The Government has to give high priority to this work which would open flood gates for generating employment in every village, town and city The present spending on housing in India is about 2 per cent of its GNP as compared to 7.5 per cent in Japan, 6.2 per cent in West Germany and 5.2 per cent in U.S.A. Of the 2 per cent of GNP spending on houses in India, the share of the villages in India would not be more than 0.01 per cent as most of the building activities in India are concentrated in the cities. Even those who have surplus money in villages try to invest it in new houses in a nearest town or city. According to Michael Lytton author of the famous book 'Poor would stay poor', this is one of the reasons why villages in most of the under develped and developing countries are sapped of surplus capital and thus getting poorer and poorer. Villages are getting poorer also because price index for agricultural produce is rising at a slower rate than that for the industrial products.

Establishment of agri-towns

Establishment of an agri-town for every group of ten to fifteen villages is essential for providing supplies, services and infrastructure needed for all their socio-economic processes. Each village should be connected by an all weather road to it's agri-town besides Thana, Block, Tehsil, Railway Station, and District Headquarters. Facilities of passenger or goods transport to each village have to be ensured. These agri-towns would also act as marketing centres besides centres for establishment of cottage industries. Their establishment would considerably reduce migration of people from villages to existing cities and towns.

Drinking water

Improving drinking water facilities in villages is of paramount importance as water is carrier of several diseases. Improving quality of water would reduce incidence of diseases which are impairing the health of the people. Problem is more serious in villages with high water table. Efforts so far made to construct shallow wells and hand pumps for supplying water have mostly been infructuous as water from shallow layers is contaminated. In many cases, contamination is continuous. A master plan for providing safe drinking water is to be prepared and implemented in phases.

Sanitation

Unfortunately, sanitation has not received the attention it deserves due to scant resources, poor knowledge of masses about its relationship with the diseases and lack of public health education. Sanitation, if it has to succeed, must be made a way of life. It is time to seriously enter into a dialogue with the people, whose active participation in this sector is the key to success.

A comprehensive sanitation programme should include sanitary disposal of human excreta, garbage, waste water, animal and farm wastes, weeds, and also control of disease vectors, personal hygiene and neces-

sary health education. Construction of individual and community latrines and bath rooms needs to be taken up on large scale. The latrines should as far as possible be connected to biogas plants. There are various social problems coming in the implementation of this programme, but they have to be surmounted through education.

As already mentioned before, each village should have its own brick-kiln on a common land. In lieu of this free land, the brick-kiln should be able to supply bricks free of cost for paving lanes and construction of community buildings in the villages.

The human excreta is the cause of more than fifty diseases and of nearly 50 per cent of the sickness in India. These diseases can be controlled with proper disposal of human excreta by inexpensive and easy to maintain methods. The human excreta is very rich in nutrients. The daily excreta of an adult in India is reported to contain 4.3 gms of nitrogen, 1.4 gms. of phosphorous oxide and 1.4 gms of potassium oxide. The society needs to be educated about its positive importance as fertiliser and its negative importance as a carrier of diseases and parasites infecting the people.

Utilisation of animal wastes

Animal wastes are not properly handled and used and are a great source of pollution of the environment. They transmit diseases and parasites both detrimental to the health of human beings and animals. Their improper storage and utilisation release poisonous gases and provide a medium for breeding of flies and mosquitoes.

Flaying of dead animals in villages is generally done in open fields and the remains after extracting the hide are left for dogs, jackals, crows and vultures to feed upon. This practice needs to be prevented.

Dung converted into dung cakes is used as fuel. Although a necessity at present due to shortage of fuel, its burning spoils the eyes of the housewives. This loss of valuable manure due to burning can be saved by the new innovation of bio-gas plants which use cow-dung, agricultural wastes, human excreta, etc. as raw material and give out slurry which is richer in plant nutrients than the ordinary cow-dung.

Construction of bio-gas plants will provide fuel for cooking energy for lighting and manure for supplying to fields Pucca compost pits will help in properly containing all refuse and finally its conversion into a valuable organic manure A master plan for recycling all animal, human and agricultural wastes has to be prepared for each village and implemented.

Deepening of ponds

Ponds which are part of socio-economic life of the people of villages should be deepened every year and utilised for integrated fish culture programme developed by the Pantnagar Agriculture University. The excavated earth from the ponds should be utilised to raise banks of ponds and level of low lanes. The village Panchayat should be made to deepen them every year as part of movement for improving village sanitation and environment. If any village Panchayat does not respond, the required work should be got done by Government and the cost realised from the village as arrear of land revenue. Necessary law in this connection should be brought about. Why not this programme is made mandatory to be taken up under Rural Employment Schemes ?

Increasing productivity

Concerted programmes to generate additional incomes by increasing productivity of land, animals, local industries and forests have to be undertaken. This would provide additional employment and resources. Per capita productivity and income are positively correlated and, therefore, our main effort has to be directed to increase per capita productivity.

Providing employment

Part-time and full-time employment specially to women and youths has to be ensured through industries and decentralisation of production processes of large, medium and small scale industries. Artisans from villages are fleeing to cities in search of jobs with greater emoluments and income. Their migration has to be checked by providing them better opportunities for earning It is to be understood that unless income move upwards, there will be no asset building and improvement in the standard of living.

Water-logging and drainage

Of late problem of water logging and accumulation of rain water for long periods have aggravated to a great extent due to unscientific planning of canals and their distributories, irrigation courses, roads, embankments, railway tracks, etc. These problems need to be tackled on priority basis as otherwise crop production in such areas in course of time would decrease and incidence of diseases would increase.

Seepage from canals is another problem which is on the increase and needs to be tackled on priority basis.

Proper land utilisation

A scientific land utilisation plan keeping local talent, land and water resources and state and national requirements would be prepared for every village and executed.

Villages having special problems causing recurring losses of crops, animals, people, houses and other properties should be tackled on priority basis. It has to be realised that unless these pressing problems are tackled, income level of the people/area would not improve.

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Tackling rural poverty

P. Thippaiah and M. Devendra Babu

This is a study of the implementation of the Integrated Rural Development Programme in Karnataka, especially in the Ranibennur taluk of Dharwad district. The major defects in the implementation of the programme, according to the study, were non-identification of suitable beneficiaries, lack of trained personnel, the system of purchase, misuse of loans and poor repayments, neglect of animals bought under the scheme, lack of infrastructure facilities, etc. The author here suggests various measures to improve the implementation of the programme.

INDIA IS ONE OF THE IMPORTANT developing countries in Asia, which is largely inhabited by rural poor with agriculture as their predominant occupation. There are 5,76,000 villages in which 77 per cent of people of our country are living. They are largely small and marginal farmers, agricultural labourers, artisans and SCs and STs. A large number of these people are still living below the poverty line and are leading a miserable life. The main cause for this situation was the failure of 'trickle down' process of economic development. As a result, both the central and state governments have launched many special schemes and anti-poverty programmes to uplift these poor since 1950-51. The first among them was "Community Development Programme" in the year 1952. This was followed by many other programmes like IADP, IAAP, DPAP, TADP, HADP, CADP, ITDP, FFWP, HYV, DRI, SFDA, MFAL, MNP, NREP, RLEGP, TRYSEM, Bank Nationalisation, 20-Point Economic Programme and so on. All these programmes have not been successful in removing the problem of poverty and unemployment in our country. By and large, these programmes are inadequate, sectoral, area-specific piece-meal in nature and lack of concreteness and implementation did not bring about the desired goals.

IRDP

With a view to covering the entire country and reducing regional disparities, a new comprehensive and integrated scheme was launched in April 1978 called "Integrated Rural Development Programme".

The main objective of this programme is to raise the poor families in the identified groups such as small farmers, marginal farmers, agricultural labourers, rural artisans, share croppers and petty businessmen above the proverty line, by ensuring higher incomes and employment opportunities in rural sector by providing them with productive assets.

It is a centrally sponsored programme and the outlay will be shared 50:50 by state and centre. Each identified family is given a loan with 25 to 50 per cent subsidy to take up a productive scheme. Initially the programme was initiated in 2300 development blocks, where special programmes such as SFDA, MFAL, DPAP and CADP were in operation. On 2nd October 1980 it was extended to all the 5011 blocks of the country to lift 15 million families above the poverty line whose family annual income from all sources was below Rs. 3500.

IRDP in Karnataka

Like other states, the scheme was implemented in Karnataka during 1978-79. As the scheme was three years old in its implementation, it was consi-

dered desirable to study the working of the programme in terms of the fulfilment of its objectives.

Methodology

Two blocks of Dharwad district, viz., Ranibennur Taluk which is closer to the District headquarters and Mundargi taluk which is away from district head quarters in Karnataka were selected for the study. Similarly two clusters from each block were selected. A list of beneficiaries was obtained from Block Development Office relating to the year 1982-83 and 1983-84. By using systematic random sampling method 75 beneficiaries from two clusters of each block were selected. A schedule prepared for this purpose has been canvassed among the selected beneficiaries. The findings of the study presented in this paper are related to the overall picture of IRDP in Dharwad District.

Implementation

At the district level DRDS, which is headed by Special Deputy Commissioner, is vested with the primary responsibility of administering the programme. At the Taluk level, the BDO and at the village level, village level workers have been entrusted with the work of identification of beneficiaries, formulation of schemes and smooth flow of credit procedures. The financial institutions of the area have been directed to finance the programmes. The Departments of Animal Husbandry and Industry have been assigned to coordinate these programmes.

The following procedures have been completed in the selected blocks as per the guidelines given by the Government of India. Primarily village clusters were formed by the committee constituted for the purpose by considering infrastructure in the area, credit absorption capacity, availability of credit institutons, concentration of weaker sections and extension personnel. This was forwarded to DRDS for approval.

After getting the consent from DRDS, a household survey was conducted by the teachers and village level workers under the supervision of block officers. From the enumerated list, Block office scrutinised and prepared the list of eligible beneficiaries. A final list of beneficiaries were prepared in Grama Sabha Meetings held at village panchayats with wide publicity which was attended by Block, Bank and Revenue officials to cross check the beneficiary in person, to know the preference of the scheme and informing him to apply for the loan. Applications received were checked by the Block Officials and then forwarded to Banks for sanctioning the loans. Once the loan amount was sanctioned, the purchase committee which was formed for buying assets visited weekly shanties along with beneficiary and purchased assets.

The beneficiaries

Out of 50 sample beneficiaries 49 were cultivators, 88 agricultural labourers, 4 artisans and 9 belonged to business and service categories.

Castewise, 49 belonged to SC & ST and remaining were non-SC and STs. That the share of SC, ST was 33 per cent which is above the target fixed by the government is a fact to be proud of.

Among the beneficiaries, a large number of them fell in the age group of 40 and above and the rest in the age group of 18 to 38 with male dominating the females. 56 per cent were illiterates, 25 per cent, 13 per cent and 6 per cent had studied upto the primary middle and higher secondary levels respectively.

The housing conditions, dress, life styles and assets position of many indicated that they belonged to the poor families and were deprived of any government assistance and bank loans earlier.

The distribution of schemes reveals that 77 per cent of beneficiaries were covered under animal husbandry schemes with the provision of both milch and non-milch animals, seven per cent were covered under Agricultural schemes such as Land Development, bullocks and bullocks and carts and 16 per cent under industry, service and artisan schemes. Thus schemes of agriculture and allied activities constitute 84 per cent and 16 per cent. This in contrast to the guidelines that 2|3rds of the families under Agriculture and Allied activities and the remaining 1|3rd under ISB should be given. A very few beneficiaries have been trained in Tailoring under TRYSEM Scheme and they have obtained loans for purchase of sewing machines. Other than this, none of the beneficiaries was trained in any other field.

Financing and assets

The total loan amount for various schemes disbursed for the sample beneficiaries stands at Rs. 4,22,094. The average loan assistance comes to Rs. 2,814. This amount includes both loan and subsidy. However, it could be noticed in the Table 1, that there exist wide variations in investments in different schemes. The average investment in animal husbandry schemes is Rs. 2890 while that in agriculture, it is Rs. 3636.36 and in ISB it is just Rs. 2073. Therefore, it is evident that a lower quantum of assistance given to ISB sector, though it requires more fixed and working capital owing to the very nature of its operation.

With regard to acquisition of asset the Purchase Committee in each block assisted the beneficiary to acquire asset. However, it is observed that some beneficiaries were asked to purchase assets by themselves and asked them to bring assets along with the seller for disbursement of loan by bank and to get certificate from the veterinary doctor. In a few cases the

purchase committee did not turn up to shanties after informing the beneficiary to be present there. In some cases, the beneficiaries could not acquire all the assets in a particular shanty; instead they have taken to different shanties at different times which caused undue inconvenience to them.

Maintenance of assets

It was found that 52.51 per cent of the households were in possession of the assets and the remaining households have either partially sold or dead or retained. Informal sources had indicated to us that the assets had not been purchased at all, and even of those who purchased, some have disposed of in a short period. The scheme-wise retention position of assets showed a dismal picture. Out of 1097 assets distributed, the percentage of dead and sold ones constitutes 36.10 and 11.39 per cent respectively. Reasons for the non-retention of assets are many. First, the assets, especially animals were dead, partly on account of inferior animals purchased. Secondly, in most cases assets were not purchased but certificates were issued to that effect. Thirdly, after the distribution of assets, beneficiaries did not take any personal care. In fact, many beneficiaries leased out animals or entrusted to village shepherds and herdsman who did not pay much attention towards the animals. Fourthly, after grazing animals, especially goats and sheep, they were not brought back to house for months together; instead they used to camp in the open fields. This led many owners to be ignorant of the health condition of the animals. Fifthly, many sold out animals due to fear of death and to meet their immediate family needs. Lastly, fodder supply and the veterinary services were by and large inadequate.

Income and employment

The study reveals that out of 50 samples, there were 16 beneficiaries in the income slab of Rs. 0-875 before the scheme and this number had come down to 9 after the scheme. The number of beneficiaries who were in the income slab of Rs. 876—1750 before also declined from 61 to 42. In the third slab of Rs. 1751—2625 there were 36 beneficiaries before and the number of beneficiaries in this group went upto 46. Similarly, the number of beneficiaries increased from 21 to 22 in the higher income slab of Rs. 2626—3499. In the income group of Rs. 3500 and above, there were 16 families before and it increased to 31 after the introduction of the scheme. From the above data it is clear that there was slight mobility of beneficiaries from lower income to higher income brackets. But actually the number of beneficiaries who crossed the poverty line was only 31, constituting 20.67 per cent. This included 16 beneficiaries (10.67 per cent) who were already above the poverty line having an annual income of Rs. 3500 even before the programme began.

The generation of income has shown variation across the schemes. Certain schemes like milch animals and ISB sector have generated more income compared to schemes of providing drought animals and other schemes under agriculture sector. This was due to less demand for the services of drought animals like bullocks etc. in the area. Another factor for this was that the lands owned by the beneficiaries were mostly leased out and the demand for the services of drought animal was almost absent. Though some income generation was found from the buffaloe scheme, there had been a steep fall in the average milk yield of the animal. This was on account of lack of proper maintenance. Added to this, even the little produce from the animal did not fetch reasonable price. The reason for this was non-availability of dairy cooperative societies to sell the milk at fair prices. On the whole the average household income was Rs. 570.57 per annum. With this meagre sum it is difficult for a family to move the poverty line within a short duration. This also indicates that there is no guarantee of additional income generation in the coming years for those who have retained their assets. Due to some of these problems many did not retain their assets.

Repayment of loans

The impact of the IRDP can be assessed from repayment position of the beneficiaries. From the study, it is quite clear that it is not encouraging. Out of 150 beneficiaries 85 have not paid any instalment, 25 beneficiaries have repaid upto 25 per cent, 24 beneficiaries between 26—50 per cent and 3 beneficiaries between 50—75 per cent of their total loan. In the category of beneficiaries who repaid between 75 and 99 per cent of the loan, none were reported. However 14 beneficiaries repaid their entire loan amount. This percentage works out to only 9.33 per cent as against 56.57 per cent defaulters who did not make any repayment and the rest are managing to pay some instalment of their loan.

The percentage repayment of total loan from all scheme is just 14.29 per cent. The scheme wise repayment showed that the percentage repayment of ISB sector was constituting 54.76 per cent. This was followed by work-bullock—22.50 per cent and milk animals 21.02 per cent. The beneficiaries of Land Development and Bullock Cart schemes did not make any repayment.

An enquiry, for poor repayment and non-repayment of loans revealed the following factors. Firstly, generation of income was less from some schemes. Secondly, whatever little income that was generated was used for own consumption. Thirdly, there was no income from alternative asset to repay the loans, where the assets were either dead or lost. Fourthly, the maintenance cost of asset in the area, as a result of drought has gone up and have no repayment. Fifthly, even those

who sold animals and other assets have also not repaid their loans. Sixthly, the average loan amount distributed to beneficiaries was very less. This made them to purchase inferior assets resulting in less generation of income and poor repayment. Lastly, in spite of notice from Banks informing the beneficiaries to repay the loan instalments along with interest, nobody seemed to care for the notices. They did not even visit the banks to explain their difficulties to the officers about their inability to repay the instalments. In other words many were wilful defaulters and believed that nothing would happen if they did not repay the loan instalments and felt that after a lapse of time the government would write off the dues.

Problems and defects

We have observed a number of problems in implementing IRD programme during our investigation They are summarised as follows ·

(a) The teachers and village level workers are assigned preliminary household survey of eligible borrowers. Since they have not been trained properly to calculate the income of the households. They often mis-identify the beneficiaries. In addition to this, there has been no rigorous scrutiny of income estimates by Block and District level authorities. There were also instances, where the non-eligible beneficiaries were selected in Gramsabha Meetings on the basis of political pressures

(b) The present system of purchasing the asset through Purchase Committee is not proper. Majority of beneficiaries have expressed dissatisfaction about this system and have felt, that the choice of assets purchased by this committee was against the preference of the beneficiary. It was also noticed that inferior quality assets were purchased by paying higher than market prices. In some cases assets were purchased lower than sanctioned loan amount and the remaining amount was not returned to the beneficiary for meeting his maintenance.

(c) Another important problem relating to animal husbandry scheme is the neglect of animals both by the beneficiary and the veterinary department causing large-scale diseases, deaths and premature delivery.

(d) The infrastructure facilities and linkages were not created by the authorities either before or after the introduction of the schemes For example, the success of Animal Husbandry Programme largely depends on better medical facilities, dairy cooperative societies and availability of fodder. Similarly, the success in ISB sector also depends on the back up services like timely supply of raw materials, availability of markets and training facilities. Generally, these were lacking in these blocks.

(e) We observed large scale mis-use of loans and poor repayment. This was largely due to poor monitoring of the programmes. The banks and BDO are mainly responsible for this. They were not effectively inspecting the asset position of the beneficiaries and for recovering the loans These agencies were only concerned with achieving the targets as per directions and not with the results.

(f) The study revealed that the average loan amount given to each beneficiary was Rs. 2814. Majority have expressed that, this amount was not enough to buy economically viable assets.

(g) It was found that many beneficiaries were asked by Banks to furnish security and guarantee to avail of the loan amount This is quite contrary to the government's norms which prescribed that, the bank which involved in the programme should not insist for security for the loan amount upto Rs. 5000.

Suggestions

With a view to improving the implementation of the scheme the following suggestions may be considered :

(1) The personnel who are incharge of identifying the beneficiaries should be properly trained in income estimations of the households. Even it could be better if they entrust this task to an expert body or a Research institute and such estimates should be properly scrutinised by DRDS and BDO's. If banks are also associated with this work there will be less scope for wrong identification.

(2) Once loans are sanctioned to the beneficiaries, they should be allowed to purchase the asset of his liking This provides an opportunity to the beneficiary to visit a number of markets to purchase good asset at a reasonable price.

(3) The loan amount should be atleast Rs 10,000. This amount will enable them to buy economically viable assets This can assure some guarantee of fetching income which can enable the beneficiary household to cross the poverty line.

(4) While selecting the beneficiary under IRDP scheme, youths in the age group of below 40 years should be given preference who naturally possess ability, strength, interest and risk bearing capacity.

(5) Informal education and training should be given to the beneficiaries on maintenance of

(Continued on page 30)

What's wrong with IRDP?

Rajendra Singh

All is not well with the implementation of IRDP, feels the author. It suffers from many handicaps. An evaluation of the programme shows that in 28 percent of the cases, assets created with the help of this programme have not remained intact with the beneficiaries. Why ? To find out the reasons, the author here analyses the information in respect of over 220 beneficiaries of IRDP in 60 districts of the country and reveals some interesting and astounding facts!

THE IMPORTANCE GIVEN TO The Integrated Rural Development Programme (IRDP) in the Seventh five year plan (1985-90) in terms of the quantum of public sector investment and coverage is in consonance with the cardinal plan objective of alleviation of poverty and unemployment. Twenty million households are expected to be provided assistance under the IRDP during the plan.

The average subsidy during the plan will go up from around Rs. 1,000 in the Sixth Plan to Rs. 1,333 to allow for higher per capita investment level to ensure adequate income returns. The banking sector would provide Rs. 4,000 crore.

What are the weaknesses ?

Since the beginning of the First Five Year Plan, many development plans have been formulated to improve village life and farm output. These programmes are inter alia related to the removal of poverty in rural areas. They, however, suffer from many handicaps such as lack of proper identification of potential beneficiaries, flaws in implementation process, pressure from relatively well-to-do and influential sections of population to corner the benefits to themselves—all resulting in a high disparity of income distribution.

Close monitoring of the major anti-poverty programme for integrated rural development shows, all is not well with its implementation. A concurrent evaluation of the IRDP by the department of rural development shows that in 28 percent of the cases, assets created with the help of the programme are not intact with the beneficiaries.

The evaluation found the status of assets varying widely from state to state. While assets are intact in all cases in Himachal Pradesh and in more than 90 percent cases of Gujarat, these are not intact in 40 percent or more cases in Assam, the North-East, Punjab, Rajasthan and the Union territories.

The data

The data for concurrent evaluation of IRDP are being collected by 29 reputed organisations in the country from 36 districts every month since October, 1985. The results of the survey from October-November, 1985 were received in Dec. '85. They have been processed by the National Information Centre. The concurrent evaluation of the programme follows the visit by the Prime Minister Mr. Rajiv Gandhi to various programme areas where he met a number of beneficiaries. The evaluation is designed to effect mid-course corrections.

The analyses

The analysis is based on information in respect of 2,266 IRDP beneficiaries from 60 districts all over

the country during October and November, 1985. State-wise samples vary from 401 beneficiaries in the case of Uttar Pradesh to only 20 beneficiaries in the case of Himachal Pradesh.

The analysis of the data shows that about 50 per cent of the beneficiaries had a family annual income between Rs. 2,000 and Rs. 3,500 at the time of assistance. About 40 percent had income between Rs. 1,000 and Rs. 2,000 and only about 10 percent of the families earned below Rs. 1,000. In the case of scheduled tribe and women beneficiaries, the percentage of lower income groups are higher as compared to the total But there is no such difference in the case of Scheduled Caste beneficiaries.

The study shows that there was a marked difference in the distribution of family income of the beneficiaries at the time of assistance across the states Whereas in Jammu and Kashmir, all the beneficiaries came from the higher income group among the poor, in Orissa none of the beneficiaries belonged to this group. Similarly as compared to 70 percent beneficiaries belonging to poorest group in Orissa, none from this groups was assisted in Gujarat, Himachal Pradesh and Jammu and Kashmir

The data shows that a little over 60 percent of all the beneficiaries have been selected in the gram sabha. The percentage varies from 100 in Jammu & Kashmir, Orissa, Rajasthan and West Bengal to nil in Bihar and Tamil Nadu About 35 percent of all the beneficiaries have been selected by officials. Selection by officials is most common in Assam, Bihar, Kerala, North-Eastern States and Tamil Nadu In only about five per cent cases, selection was done by others including Members of Parliament. Members of Legislative Assemblies and Members of Legislative Councils. This mode of selection was mostly important in Bihar, Haryana, Madhya Pradesh and Maharashtra

The Study reveals that the national average of the time lag between inclusion in the block list for assistance and the forwarding of application to the bank is about 280 days In the case of individual states, this varies from as much as about two years in the case of Maharashtra and Punjab to as little as one month in the case of Jammu and Kashmir.

The time lag between forwarding of applications to the bank and the actual assistance is a little over 100 days.

Misuse of funds

A sample survey conducted by the Programme Evaluation Organisation (PEO) of the Planning Commission has confirmed the general impression that much of the money on the Integrated Rural Development Programme (IRDP) is being, illspent As many as 63 per cent of the respondents questioned on the programme said that there had been no accretion to the family assets of the target group. Only 37 percent of the beneficiaries reported any increase in assets What is worse about 26 percent of those who availed of the assistance did not deserve it. However, 88 per cent of the 1170 households surveyed by the Programme Evaluation Organisation (PEO) have admitted that their incomes had increased after getting assistance under IRDP. Similarly 77 percent of the selected households reported that their consumption level had increased.

The study also brought to light that about 50 per cent of the beneficiaries were in the annual income bracket of Rs. 2,500—3,500, 29 percent in the income group of Rs. 1,500—2,500 and 15 percent in the category of the poorest of the poor having an annual income of Rs. 1,500 and below. Thus the deserving beneficiaries comprised only 15 percent of the total beneficiaries This indicates that, the block level functionaries in their anxiety to reach targets, select undeserving beneficiaries. The data collected by the PEO indicated that only 20 percent of the households were selected in the open Gram Sabha meetings.

The PEO study also, touched upon the selection of schemes and assets for the beneficiaries. The data revealed that about 75 percent of the beneficiaries received assistance only under farm sector. Within this sector, 44 percent of the total selected beneficiaries were provided with animal husbandary units, mostly milch cattle. About 17 percent of the sample households were provided with schemes falling in the tertiary sector and only 8 percent were given for secondary sector schemes. This indicates that while the block level machinery is interested to achieve the target, no attention was paid to the preparation of economically viable schemes. This led to increasing overdues. The PEO data revealed that a little over 41 percent of the households became defaulters in respect of the loans advanced to them. Only 28 percent of the sample households were regular in repayment of the loans to the extent of 80 to 100 percent.

Poor versus affluent

It would thus appear that the programme has failed twice over, with the deserving poor getting little out of it and relatively affluent who had no right to the assistance under the programme hogging it by a variety of ruses. This is basically a socio-political problem having more to do with the rural power structure than with operational deficiencies, though it is the latter, that PEO has examined at some length. This is not to say that these operational aspects are unimportant but merely to emphasise that without the will to operationalise the programme to secure its declared purposes, refinements and improvements of its mechanisms have only a limited value. Since the socio-political issues are beyond the powers of an official evaluation organisation to set right, it has necessarily to concern itself with the administrative and organisational instruments.

Leakages

Against the backdrop of existing rural set up, there is always scope for leakages in the implementation of anti-poverty programmes such as IRDP. The general impression is that at least 30 percent of the beneficiaries had failed to come out of the povertyline. It is further believed that the quantum of assistance given was not enough in most cases and therefore a second dose of assistance is required. However, inspite of all this, the impact that IRDP has made on the lives of people in several parts of the country cannot be under rated. Alongwith programmes like National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP), it has certainly contributed to some mitigation of absolute poverty. The Integrated Rural Development Programme (IRDP) has imparted dynamism in the rural sector helping the very poor households to climb the income ladder even if they have not been able to cross the povertyline. This has been brought out in a confidential review, prepared for the Planning Commission by a top agricultural economist in three recent studies. Two of the studies were sponsored by the World Bank. The review's observations are in sharp contrast to the findings, of the three studies which had painted a dismal picture of the IRDP.

The review says, it is too much to expect very poor households trapped in poverty for centuries to be lifted above the povertyline in a couple of years. Therefore, the index of crossing the poverty line adopted by the three studies, was inappropriate for assessing the impact of the programme. This was particularly important where income levels were below the poverty line income. The goal is rendered even more difficult owing to short run set backs caused by weather, technology and rising food prices.

The three studies which are field work based evaluations have been reviewed by Dr. K. Subbarao of the Institute of Economic Growth. These studies are viz., Implementation of IRDP by the NABARD, an economic assessment of poverty eradication and rural unemployment alleviation programmes and their prospects by the Institute of Financial Management and Research, Madras.

Coordinated efforts, must

The key to success of the major poverty amelioration programme lies in a co-ordinated effort between the developmental agencies and the financing institutions. This would be possible only if they understand their exact roles and the limitations of one another. Administrative support to anti-poverty programmes are of the utmost importance. The DRDAs should be equipped to undertake planning and formulation of viable schemes. The block level machinery is not capable of providing an appropriate and integrated delivery system.

Monitoring of IRDP assumes much significance particularly at the block level. Aspect of effective follow-up of beneficiaries during the Sixth plan period was neglected too much, with the result that lot of beneficiaries were left to their own fate and could not come above the povertyline. Block level functionaries were found indifferent towards the follow-up of projects and recovery of bank dues. Banks have also not formed a uniform system of feeding the latest position of irregular loans to Block Development Officers periodically. Co-ordination in this respect is to be maintained of the highest order.

Vikash Pustika containing full details of each beneficiary under the scheme from Distt. Rural Development Agency (DRDA) and loan pass-books from banks shall be kept upto-date, which will prove to be an effective source of information to both Bank and Block staff.

Role of beneficiaries

The beneficiaries should have some say in the planning and implementation of anti-poverty programmes. That is why, Reserve Bank of India have advised banks to fix specific dates for disbursement of loans to farmers in rural areas, e.g. 2nd and 4th Thursday in each month. Should any of these days fall on a holiday, the previous working day should be fixed for disbursement of loans. All the applicants whose loans are to be disbursed on the specified day should be asked to assemble at the branch premises at a particular time and when they assemble, the disbursement should take place. Before the disbursement of loan to each applicant, the details regarding loan applied for, loan sanctioned, reasons for rejection, if any, purpose, security, rate of interest, repayment period, subsidy, eligible charges like insurance premium to be debited to the loan account, etc. should be read out in the vernacular language so that the borrower has full knowledge about the loan he is availing. Loan pass-books should also be issued to all the borrowers.

Action cell

There is an urgent need for ensuring people's participation at various stages of the planning process At each village|Nyaya Panchayat Level, an 'Action Cell' should be constituted consisting of 5 successful beneficiaries who will make good rapport with Bank and Block staff and work as a link between Bank, Block and beneficiary. Such popular participation would automatically make the beneficiaries accountable for.

A high level committee set up by the Planning Commission to review the existing administrative arrangements for rural development and poverty alleviation programmes, has submitted its report rerecently.

The committee headed by Dr. G.V.K. Rao reports that if past experience is any guide, the government machinery alone cannot be assigned the responsibility for achieving economic development and social justice.

The committee has emphasised to involve the people and their representatives effectively in drawing up programmes of rural development and their implementation. Panchayatiraj institutions have to be activised and given all the support needed so that they can become effective organisations for handling people's problems.

Role of voluntary efforts

The report recommends that it is necessary to involve voluntary agencies, with informed idealism, operating in rural areas, in every possible way. As recommended by it, the district should be the basic unit for policy planning and programme implementation. The Zila parishad should therefore, become the principal body for management of all development programmes at the district level The president of the Zila parishad can be directly elected for a term co-terminus with the Zila parishad or for one year each on the mayoral pattern The work of the parishad should be done by a number of sub-committees elected on the basis of the proportional representation so that participatory democracy could be developed and encouraged.

Proper district plans

The report has reiterated the concept of a properly prepared district plan It says that preparation of such a plan is a pre-requisite for having a process of development which will ensure that the poor are properly taken care of. All the development departments should clearly spell out the activities which they would undertake for assisting the poor The district plan should include all the resources available both in the plan and non-plan as well as institutional resources The committee has expressed concern over hold of moneylenders who still meet 60 per cent of the requirement of rural credit It is therefore required that credit institutions like co-operatives. commercial banks and regional rural banks should come forward in a bigger way to meet the credit requirements of the rural poor The consumption requirement of the rural poor should also be taken care of by the agencies.

The report recommends that a very senior officer of the rank of Chief Secretary, designated as development commissioner should be incharge of development administration at the state level. The major rural development departments like rural development, agriculture, animal husbandry, co-operation and industry should be directly under his purview The secretaries of these departments should be directly under his purview.

The committee has further recommended that a post of District Development Commissioner (DDC) should be created to look after and co-ordinate all the development activities in the district. DDC may be made the chief executive of the Zila parishad in these states where the Panchavat raj institutions hold the responsibility for planning and implementation of various development programmes. The DDC should be of a higher status than that of the district collector in order to establish the primacy of the development administration over maintenance administration

And authorities

The report further says that the proliferation of development agencies and departmentalisation and fragmentation of functions should cease. In the proposed set-up, the most important constituent of the district development office will be district planning team, the district rural development team and district finance and accounts officer who will be incharge of the district budget also

The committee recommends that the block development office should be the sheet anchor of the entire rural development process. For this purpose, the status of block development office should be upgraded. The chief executive officer of the block and tehsil may be designated.

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(*Continued from page* 11)

Training and educating

People need to be trained to think, plan, and execute programmes for their benefit themselves with or without the help of Government Training programmes for improving health, sanitation, existing skills, transmitting new skills have to be undertaken on a large scale. People have to be made conscious of their duties, responsibilities, and rights and also facilities Government was offering for them.

School education

Integrated schools need to be opened to cater to formal and informal education, adult education classes, training people, film shows, housing village library, parents meet, etc These should be manned by well trained people who should have quarters to live there Education for girls and boys upto eighth classes should be combined. The present compartmentation in various rooms of education need to be given up in favour of integrated schools.

The suggestions given herein to transform the villages are based on the principle that they generate resources for future development of the area, people and animals of the villages from not only eco-environmental point of view but also from a wider angle of transforming the socio-economic condition of the villages and developing healthy crops, people, animals, and eco-environment □

Why poverty continues?

J. Ramadas Reddy

Despite launching various anti-poverty programmes, no significant impact is seen on the rural poor and there is no sign we would get rid of poverty even in the next decade! Moreover, according to the author, there are neither local resources to continue anti-poverty programmes nor enough demand for them. Vigorous efforts, he feels, are needed in several directions and he suggests steps that need be taken to speed up eradication of poverty.

POVERTY IS NOT A NEW PHENOMENON that has been troubling the world. Since times immemorial, rulers as well as individuals have been fighting the severity of the problem. It is viewed both in absolute and relative sense In the absolute sense, it is a condition of acute physical wants—starvation, malnutrition, disease, want of clothing, want of shelter and almost total lack of medical care. Relative poverty, unlike the absolute poverty, is more a matter of subjective definition than of objective conditions. For instance, a person may have everything that a normal human being requires but he may have an uncomfortable feeling that he is poor because he cannot keep up with those living next door.

How many of them ?

In the report of 'Task Force' on projections of "Minimum Needs and Effective Consumption Demand" set by the Planning Commission in 1977, the poverty line is defined as the mid-point of the monthly per capita expenditure class having a daily caloric intake of 2,400 per person in rural areas and 2,100 in urban areas. On this basis, the Sixth Plan (1980—85) has drawn the poverty line in terms of 1979-80 prices per capita per month at Rs. 76|- for rural areas and Rs. 88|- for urban areas. During the Sixth Plan (1980—85) 48.4 per cent of the Indian people had lived below the poverty line. At the beginning of the Seventh Plan, there are still 37 per cent of the people who are yet to be lifted above the poverty line.

Why poverty ?

Poverty is often attributed to the vicious circle of low income, low level of savings and low investment leading to the low level of employment and income If we further proceed, the circle can be widened by taking into account low productivity, market imperfections, traditional technology and know-how and concentration of economic power. In subsistence economics, labour force participation is restricted by the low level of perceived needs and the lack of incentives, given the socially conditioned propensity to share and the high effort price of labour relative to the expected return to the labour. Urban poverty is regarded as an offshoot of the rural poverty.

The effects of poverty can be seen in reducing the individual capacity to work or to respond to incentives to work. The socially undesirable effects are lack of drive and initiative, avoidence of physical and mental efforts, excessive rest and decrease in self-confidence Income and wages will also be reduced through ill-health and malnutrition by reducing productivity, by channelling those affected into low income jobs and by making them intermittent labour

force participants. When the poor are sick, they sick longer because they have inadequate medical care. Often, there will be little motivation or hopes to rise from the vicious circle of poverty either for the young or for an adult.

Education, can they get ?

Irrespective of sex, access to school may, however, be a problem for children in poor agricultural areas. Moreover, the cost of keeping children in the school in such areas will be high. The poor live largely in slums or in backward rural areas. Their children do not learn to read, to write and to speak well. Poverty households investing in education have to curtail severely expenditure on other basic items. Unless the public sector helps to bear the cost of education, the poor will not be able to get higher education

The suffering women !

In communities where sickness and lack of food are common, it is the women who are generally more likely to suffer from malnutrition and ill-health consequently these factors are more likely to effect female labour force participation than male If the head of the family is the only main income earner, then any deficiency in income or food will tend to be borne by the women and children Also, ill-health could be expected to have a greater negative effect on the probability of participation of family members other than the household head In addition, they will often be required to care for sick children which will place uncertain demands on their time. Further, employers will tend to discriminate against women workers if women are likely to have higher rate of absenteeism. In various ways, health and nutritional factors will place strong constraints on female labour force participation If unemployed in adulthood, they would be soon weakened by a shortage of food and would rarely have the capacity to recover through the opportunity for a prolonged period of well paid employment.

Poor lot of farmers

In the case of small and marginal farmers malnutrition and sickness often follow poor harvests or continuous declines in the prices of output and increases in the prices of necessary inputs. When productivity of these farmers declines, their subsistence income will decline and increases indebtedness All of which together speed the process of deterioration of the peasantry and increase reliance on wage labour. It seems that sickness and malnutrition have deterred the adoption of technological improvements by small farmers and thus checked the increase in production.

Echoes of the constitutional provisions under the Directive Principles of State for the removal of poverty in India are heard in the formulation of all the five year plans Anti-poverty programmes such as IRDP, NREP, DPAP, RLEGP, etc., are, now-a-days, in vogue. But no significant impact is seen on the rural poor because there are neither local resources to continue such programmes nor enough demand for them. Any programme intended to mitigate the problem of poverty must basically provide food for the hungry, work for the jobless and shelter for the homeless. To fulfil these objectives, the following suggestions will be of much use for the policy decision makers.

What needs be done !

(1) Deveopmental strategy based on agriculture with allied animal husbandry, dairying, forestry, fishery and light industries will have significantly greater impact on gross output value added and employment.

(2) Small farm oriented growth strategy should be followed to increase production and return on small holdings along with increasing job opportunities.

(3) Land ceiling operations must be operated with true spirit.

(4) More grants to schools in backward areas and for backward classes need to be provided.

(5) Regional imbalances must be duly taken care of.

(6) Better information, better education and better training programmes for both youth and adults will be useful in fighting poverty in rural areas.

(7) There must be a provision for providing free food of high caloric value to the vulnerable sections of poor children and cloth at concessional rate for the poor in rural areas.

(8) Sectoral approach followed in rural development programmes must be given up forth with and necessary linkages will have to be established among the various rural development programmes.

(9) Finally, peoples development council must be established in every taluk to render services such as knowledge about the introduction of Government developmental programmes, credit facilities available in banks and Health programmes

Thus, efforts need to be made in several directions. The pattern of production must lay emphasis on food and other articles of mass consumption. There must be mass employment generation which will sustain and will be sustained by greater availability of wage goods. It is also essential to augment Social consumption and investment with a view to maximising the efficiency and productivity of vast numbers as well as quality of their lives Moreover, Institutional reforms and fiscal policy must be directed towards the alleviation of rural poverty in India. □

Voluntary funding for rural development

Dr. B. N. Sahay
&
U. N. Malik

Tackling the problems of rural areas needs a national effort. In this direction the setting up of the National Fund for Rural Development is a welcome step, says the author. He analyses the various facets of the Fund, especially highlighting the eligible programmes and schemes for assistance and how to donate and seeks help from it. Donations made to the Fund qualify for rebate under the Income Tax Act too !

THE GOVERNMENT OF INDIA ACCORDS highest priority to the programmes of rural development for attaining the objectives of increasing agricultural production, creating employment, eradicating poverty, and bringing about all-round improvement in the rural economy. The nationwide massive Poverty Alleviation programmes, like Integrated Rural Development Programme (IRDP), National Rural Employment Programme (NREP), and Rural Landless Employment Guarantee Programme (RLEGP) are already in operation in addition to the area development programmes such as the Desert Development Programme (DDP) and Drought Prone Area Programme (DPAP) and those initiated for increasing the agricultural production Similarly, for meeting the infrastructural requirements and social consumption needs, the Minimum Needs Programme is also in operation for over a decade.

Tackling the problems of rural areas needs a national efforts, the Government would also like to encourage individuals, corporate and non-corporate bodies to participate in this venture.

National Fund for Rural Development

The National Fund for Rural Development was set up on February 10, 1984. This was done in order to provide an incentive to companies and cooperatives societies to incur expenditure through donations for utilisation on approved programmes of rural Development. Such donations made by all categories of tax payers will be deductible in computing the taxable income.

Management

The Fund is managed by a Committee under the Chairmanship of the Prime Minister with Minister of Finance, Minister of Planning and Minister-in-Charge of the Department of Rural Development in the Ministry of Agriculture as Members and Secretary in the Department of Rural Development as Secretary. The Committee of Management may co-opt other Union Ministers or other persons, as Members

How to donate ?

Donations to the Fund are specifically made out in the name of National Fund for Rural Development and sent to Joint Secretary (NFRD) Department of Rural Development, Government of India, Krishi Bhavan, New Delhi-110001, who will also issue

receipts to the Donors to enable them to claim income-tax exemption on the amount donated subject to as under the Income-Tax Act, 1961. While making the donation, the Donor has to give the following description :—

(a) Name of donor, (b) address, (c) Cheque No., (d) Amount ; (e) Preference (if any) for project|programme, (f) Preference (if any) for area to be covered, and (g) Preference (if any) for implementing agency (name and address).

The donor has also to confirm that the amount is donated to the Fund absolutely and he shall have no further right in regard thereto for any reason.

The Donors to the Fund may recommend their preference for area or locality and the rural development programme for which the donation may be utilized, as also the Implementing Agency through which the programme may be undertaken and implemented. The recommendations, if any, of the Donors may be given due consideration to the extent deemed appropriate by the Committee which shall not, however, be in any manner answerable to the Donors or any person for its decision in this behalf.

How to seek help from the Fund

All applications for financial assistance from the Fund shall be made by an Implementing Agency (whether or not recommended) in the prescribed form which shall clearly formulate programme or project of rural development and the requirements of the Implementing Agency intending to take up a programme or project for approval of the Government. The relevant form duly completed in all respects is to be submitted (in triplicate) to the Secretary, Department of Rural Development, Krishi Bhavan, New Delhi-110001.

On receipt of an application, the Government may reject or accept it, with or without modification, as the case may be, subject to the approval of the Committee.

Where the Donor has given preference for the project|area the application for approval of the programme for rural development should contain complete details of the project and indicate the rural area where the project is to be executed. The applicant is to furnish, in particular, information in respect of the following :—

(a) full description of the rural area concerned indicating the names of the villages, tehsil, district and state and the reason for its selection ;

(b) the approximate total population of the rural area and the scheduled castes|tribes who are to be benefited by the programme|project ;

(c) the total period within which the project is expected to be completed and the total monetary outlay involved (with year-wise break-up of capital as well as revenue expenditure of the programme|project) ; and

(d) scheme of financing the project ; where the project involves any recurring liability to be met by the State Government or any other agency, a letter from the State Government or the concerned agency should be produced to the effect that the State Government or the concerned agency undertakes to meet that liability in the first instance and shall not subsequently withdraw its commitment in this behalf.

The Implementing Agency, if any, preferred by the Donor and *prima facie* acceptable to the Government shall furnish its project proposals in form within three months of receipt of the application for consideration of the Government|Committee. If no such proposal and|or the application are|is received by the Government within three months, the above preference of the Donor will lapse and will not require any further consideration by the Government|Committee.

The Government will maintain a shelf of projects|programmes which can be undertaken|implemented by an Implementing Agency recommended to, or identified and|or approved by the Committee.

The financial assistance by way of grant shall be made out of the Fund to the Implementing Agency if approved by the Committee subject to such conditions as may be imposed by the Committee|Government and shall always be deemed revocable, wholly or partially.

It is a strict condition of all financial assistance by way of grant to be extended out of the Fund that the benefit of the programme of rural development should flow to the public in general in the rural areas and not to the Donor or Implementing Agency for any purpose.

Eligible programme and areas

The categories of projects of Rural Development eligible for assistance from the National Fund for Rural Development is given below :—

1. Construction and maintenance of rural link roads, village streets, sanitary latrines, drainage, pavements, drinking water projects and laying of pipes for supply of drinking water to problem villages|areas and also construction and maintenance of dispensaries and welfare centres, etc.
2. Establishment of rural industries, animal product units, workshops and customs service centres.
3. Harnessing solar energy, wind and other renewable sources of energy including bio-

gas plants, rural electrification and construction of houses for weaker sections on sites provided by Government or village Panchayats.

4. Development of community pasture land and taking up afforestation programmes with special emphasis on social and farm forestry.

5. Projects relating to land reclamation, soil conservation, water harvesting, minor irrigation and installation of pump sets for the benefit of small|marginal farmers. As also construction of field channels and drainages.

6. Production and supply of improved variety of fertilizers, seeds and promoting their use among small and marginal farmers through soil analysis, demonstration, etc.

7. Supply of plant protection equipment, farm machinery and other implement to village panchayats, cooperatives, etc.

8. Assisting farmers in purchase of cattle, establishment of veterinary dispensaries, milk collection centres and assistance in dairy products processing. As also assistance in poultry, fishery and sericulture, etc.

9. To organize seminars, conferences and workshops for experts, academicians, administrators, researchers and non-officials on various aspects of minimum needs programme and rural development administration.

10. To undertake action oriented researches and to provide consultancy services on various problems of rural development.

11. To organise income generating programmes for rural women and to operate programmes of child development and human resources development. As also programmes of handicapped and disabled in the rural areas.

12. To organise programmes for education in rural areas and for assistance in the provision of agricultural markets, co-operative stores and other allied activities.

13. Agricultural demonstration, extension and fish seed production.

However, the committee may in its sole discretion [illegible]nce any other types of rural development pro[illegible]mmes|projects from the Fund. The projects or [illegible]grammes which an applicant Implementing [illegible]ncy may like to undertake|implement shall be [illegible]mulated in a manner to be capable of satisfying local needs or the rural area concerned.

The programme or project to be undertaken| implemented in the hilly, tribal, drought prone and desert or other backward disadvantageous areas where the majority of the beneficiaries come from the Scheduled Castes and Scheduled Tribes or which are for primarily the benefit of women will be given priority, in considering the programmes|projects before the Government|Committee.

Rules and regulations

There are detailed rules and regulations issued by the Ministry of Agriculture and Rural Development (Department of Rural Development) Krishi Bhavan, New Delhi, for administering the National Fund for Rural Development. These rules and regulations contained useful information regarding :—

(i) Eligible implementing agency ;

(ii) Ownership and maintenance of the assets created ;

(iii) Derived Income and Property of Implementing Agency ;

(iv) Monitoring Procedure ; and

(v) Dissolution etc. of Implementing Agency, etc.

The administration and management of the financial assistance paid out of the Fund will be provided by the Department of Rural Development which will also monitor the projects or programmes on behalf of the Committee and all matters relating or incidental thereto. The Committee may delegate to that Department such other or further functions relating to the Fund or the financial assistance or the projects|programmes as may be decided by the Committee from time to time.

National Fund for Rural Development provides a good avenue for making donations for the noble cause of rural development and assisting the people below the poverty line through various types of development activities. Donations made to the Fund qualify for rebate under the Income-tax Act.

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Power generation up in April-September 1986

The total power generation in the country in the first six months of 1986-87 was 90.678 billion units as against 82.658 billion units in the first six months of 1985-86 showing an increase of 9.7 per cent.

Of the total generation, the thermal generation was 60.418 billion units, hydro 27.755 billion units and the nuclear 2.505 billion units.

The plant load factor of thermal power stations during April—September 1986 was 51.4 per cent as against 50.5 per cent in the corresponding period in 1985.

O.M.F.-New prospect in eye treatment

P. Bhattacharyya

Soluble ocular medicamentous films (O.M.F.) is a fundamentally new device introduced into the clinical practice by the Soviet researchers for proper administration of drugs into the eyes of the patients. Under the present practice drugs administered into the body of the patients get quickly removed through various excretary functions or get dissolved in the fluid. So, to achieve the desired effect, repeated administration of drug becomes necessary. The new device, O.M.F., does away with this practice. It has been found extremely useful in the treatment of eye diseases. The author here explains how the new device functions.

MEDICINE TODAY FULLY REFLECTS the breath-taking progress achieved, especially over the past couple of decades, in various fields of science and technology. Diagnostics and surgery, two of the main areas of medicine, have undergone a sea change as a result of introduction into clinical practice of ever-emerging new equipment including the endoscopic as well as surgical means such as ultrasonic techniques, thermography, nuclear magnetic resonance, computerised axial topography (CAT scanning), laser scalpel, deep freeze, hyperthermia, plasma scalpel and microsurgery.

At the same time physicians have also been provided with an array of new drugs—results of latest researches in various fields including biotechnology. Sophisticated researches in immunology today have unravelled new horizons for overcoming diseases held as intractable until recently.

Drugs regulations

However, one of the main problems for the physicians brought to the fore by the modern researches has been the proper administration and regulation of drug contents in human body. For instance, drugs administered into the body of patients get quickly removed through various excretary functions or get dissolved in the fluid. Therefore, to achieve the desirable drug effect repeated administration of it becomes necessary. This, in turn, leads to continuous changes of the drug concentration in the body—from relatively high at the beginning to very low before the next intake, which is undesirable.

The Soviet invention

To remove this inadequacy the Soviet researchers have developed and introduced into clinical practice a fundamentally new device—soluble ocular medicamentous films (OMF) as conveyers of drugs. The drug carried by the matrix-films penetrates through the mucosa and the walls of intraocular vessels straight into the blood stream, the film resolving gradually. OMF has been found very useful in treatment of eye diseases also.

Except the cases warranting surgical interventions, eye drops and salves have, till the present, retained a major role in the treatment of eye diseases. But practical experience shows the difficulties of these both for the doctors and the patients. For instance, the mode of the applications of eye drops and salves fails to assure the administration of precise dose of a drug, the error is being as high as 40 to 80 per cent. Secondly, because of the short duration of the effect of the drug the daily installations in the course of intensive therapy has to be 6 to 12, or even 18 in grave cases. The organism of the patient often res-

pond to such heavy administration of drug with an allergic reaction.

These problems have long since caused worry to the opthalmologists. As a result, about a couple of decades ago use of eye drops and salves were augumented by application of membrane systems and plates impregnated with medical preparations. On being introduced into the eyes of patients, these membranes or plates slowly discharged the drug within a adequately long period of time. But these too, in course of clinical practice, proved inadequate. Their principal drawback was their insolubility. In addition, the plates introduced into the eye constituted a foreign body which often obstructed the pupil and the vision of the patient. Therefore, after a period of time the membranes and the plates had to be taken out of the eye. In contrast to them, the clinical experience with OMF demonstrated their undisputed superiority.

The new device

The ocular medicamentous films consist of polycrylamide copolymers impregnated with the desired drug. The film melts in the tear fluid and forms a mucous mass within 10 to 15 minutes of its introduction in the eye. Because of its viscosity, the mucous mass is retained for a long time in the conjunctival folds and releases the drug into the eye at a rate slower than all the known prolongation agents.

Insertion of OMF into the eye is done only once a day, or even lesser frequency on some occasions. During a period of 24 to 48 hours the drug continuously enters the eye in a strictly presset dose.

Its benefits

The novel remedy preserves the natural protective film of the cornea which degrades readily as a result of repeated instillations and the toxic effect of eye tissue is reduced much.

Generally, 80 per cent of the drug administered into the eye in the form of a salve or drops is discharged onto the eye lids or through the tear ducts and only 20 per cent of drug gets absorbed into the eye. Hence the OMF not only releases the drug in a present dosage and spare the complication of repeated instillations, but also reduces the consumption of drug by a factor of 5 to 10. OMF has the shelf life of 1 to 2 years, while the package used ensures the sterility of the film.

The medicamentous films are inserted into the conjunctival fornix by means of a pincers and, if required can be done by the patient himself.

Better results

Prolonged clinical tests with OMF have shown that these get better results and minimise the period of treatment compared with conventional medicine by 35 to 40 per cent number of procedures by 10 to 30 per cent. In addition, these also reduce the occurrence of allergic reactions to drugs and save the labour of the medical personnel.

Principal drugs and agents used in the OMF are antibiotics, sulphanilamides, conticosteriods, mydriatics, anaesthetics, enzymes, antiviral drugs, hypotensive drugs, anti-inflamatory drugs, anticataractal drugs and vitamins. OMFs are used to treat glaucoma, bacterial, viral and adenoviral conjuctivitis, keratites, endothalmites, allergies, irites and iridocyclites, trachoma, paratrachoma, metabolic lesions and cornea, cataracts and burns. OMFs are also applied for vitreous haemorrhage resolution, in keratoplasty and for prevention of infections in traumas.

Adoption in other countries

The OMFs have been clinically tested in number of foreign countries with quite positive results. They have been patented in the USA, France, Canada, the West Germany and a number of other countries

It may be stressed in this connection that in addition to a number of other fields of medicine Indian medical scientists cooperate with their Soviet colleagues in opthalmology also. With considerable prevalence of eye diseases many of which regrettably lead to blindness. (the country has almost one-fourth of the total 40,000,000 blinds in the world). India stands to much by availing of the OMF as it has by adopting the methods of eye surgery developed by the world famous Soviet eye surgeon Professor S. Fyodorov.

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Central Warehousing Corporation earns profit in 1985-86

The Central Warehousing Corporation earned a profit of Rs. 22.89 crore during 1985-86 as against Rs. 17.15 crore in the previous year. The Corporation paid dividend of over Rs. 3 crore to the Central Government and its other shareholders during the same period as against Rs. 2.7 crore in the preceding year. During 1985-86, the Corporation utilised its storage capacity to the full extent as against 97 per cent in 1984-85.

The Corporation was operating with 430 warehouses having capacity of 53.47 lakh tonnes as on March 31, 1986. During the Sixth Plan, the Corporation constructed a storage capacity of 15.40 lakh tonnes and plans to create an equal storage capacity during the Seventh Plan period. Of this, it has already created a capacity of 4.20 lakh tonnes during 1985-86, the first of the Seventh Plan. During the current year 1986-87, the Corporation expects to complete a capacity of about 2 lakh tonnes.

New policy decisions on exports announced

Measures to cut costs, upgrade quality

THE GOVERNMENT ANNOUNCED a series of major decisions for boosting exports in selected sectors, on October 24, 1986.

These policy decisions were cleared recently by the Cabinet Committee on Exports at a meeting which was held under the Chairmanship of the Prime Minister and attended by the Union Commerce Minister, Shri P. Shiv Shanker.

These decisions based on a strategy paper initiated by the Ministry of Commerce are intended to provide a policy framework for boosting exports in the identified thrust sectors, particularly the engineering sector and are aimed at making exports competitive through reduced costs, upgradation of technology and more effective promotion of Indian goods in overseas markets. These are intended also to speed up decision-making in key export sectors within the parameters of policy guidelines already approved.

It has been decided that the facility of supply of raw materials at international prices will be extended to all major export sectors where raw materials are used for export production. This facility may cover not only inputs for manufacture but also process accessories if they form a high percentage in the cost structure. Details of the proposal will be worked out on a case by case basis in consultation with the concerned Ministries.

The principle of supply of raw materials at international prices is already applicable to iron and steel, steel alloys and it was recently decided to extend it to aluminium and aluminium-based industries primarily to help engineering exports.

It has also been approved that the trade may be allowed to utilise 5 per cent to 10 per cent of their foreign exchange earnings for undertaking export promotion activities. The application of this scheme should be according to the categories of products. Details of the scheme are to be worked out in consultation with the concerned Ministries.

Capital goods

It has been decided in principle to allow import of capital goods for export production in respect of the identified thrust industries. This is felt to be necessary both for creation of new capacities in the export sector as well as to upgrade technology and improve the quality of products. It is proposed that subject to the condition that the particular items of machinery are not available in the country for selected sectors with very high export potential, such machinery may be allowed to be imported either free of duty or at very low rates of duty. This principle has already been applied to import of leather goods, diamond cutting and polishing tools and selected equipments for marine products and there is evidence to suggest that as a result of reduction of duties investment in these areas is taking place and technologies are being upgraded. In the case of a number of engineering industries, it has been found that the high incidence of imported duty alone at present contribute substantially to cost. Actual implementation of this proposal applicable to thrust industries will be made on a case by case basis.

Duty reliefs on exports

Government have also accepted in principle that there should be full remission of excise duties and domestic taxes on exported goods, but this again is to be worked out on a case by case basis. The remission may also take into consideration the profitability in exports of a particular product. While within the parameters of the principle of rebate in

duties, government is already operating duty drawback and cash compensatory support scheme (CCS), in some cases implementation of the scheme is found to be inadequate and non-remission of duties has been known to have put our exports at a disadvantage.

In continuation of the policy announced in September 1986, it has been agreed that firms which are willing to export 60 per cent of their production should be allowed to manufacture selected goods which have good export possibilities be accepted in principle but decided on a case to case basis. The stipulation that firms should set up such industries only in backward areas will, however, remain.

Ready-made garments are to be allowed to use foreign brand names subject to the condition that only indigenous fabrics are used, at least 75 per cent of the production is exported and no royalties are allowed to be sent out of the country on the domestic sales.

Power supply for exports

In addition to the above decisions, proposals relating to facilitating power supply for export units are also under consideration. In this connection, it is proposed that firms which export 25 per cent or more of their production and want to instal captive generating units should be provided with diesel oil at cheaper price so that the cost of power generation is not too high. This has already been accepted in the case of glass and ceramics industry which is being provided furnace oil at lower prices. Shortage of power frequently adds to costs and dislocates delivery schedules of exporters in several key sectors.

Upgradation of technology

It is recognised that a liberal approach needs to be adopted for constant upgradation of technologies in the key sectors particularly engineering goods, which can be linked, wherever necessary, to export obligation. This may also be implemented on a case by case.

These policy guidelines have come in the wake of a series of meetings taken by the Commerce Minister with a cross-section of the industry over the last few months to discuss the constraints in the areas of production, marketing and finance faced by exporters.

Specific proposals in various export sectors will now be worked out within the framework of the principles already approved by the Cabinet Committee on Exports.

It may be recalled that 14 thrust sectors have been identified for exports. These are : tea, specially in packaged and value-added forms; cereals, in particular wheat; processed foods, including fruits and juices, meat and meat products, and fresh fruit and vegetables; marine products, specially in value-added forms; iron ore; leather and leather manufactures, with an emphasis on the latter; handicrafts and jewellery; capital goods and consumer durables; electronic goods and computer software; basic chemicals; fabrics, piece-goods and made-ups; readymade garments; woollen fabrics and knitwear and projects and services.

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Energy management and conservation to be improved

Government is actively considering to introduce the practice of labelling the products with the efficiency figures. For the energy intensive industries a system of energy audit is also being introduced. This is being done in view of the fact that unless India emulates the achievements of the developed countries which have drastically reduced their energy consumption per unit of industrial product, the country cannot close the gap between demand and supply of energy. The long-term energy policy will involve restructuring of the energy base and increasing efficiency in the energy use with proper energy audit and efficient management the country can effect a drastic reduction in energy consumption.

One of the means by which the gap between demand and supply of energy can be bridged is by better energy management through optimum inter fuel substitution and by conservation of energy by efficient usage and by avoiding wasteful practices.

The efforts to minimise the use of oil and oil products in industry has been a success. The intensity of oil consumption in the industrial sector has been progressively reduced from 0.107 kg. per rupee of value added in 1960-61 to 0.050 in 1982-83.

Studies conducted by various organisations such as National Productivity Council have revealed that, on an average, about 15 to 20 per cent savings in energy consumption is easily possible without any significant investment. An Inter-Ministerial Working Group on Utilisation and Conservation of Energy has estimated that the overall potential for energy savings in the industrial sector is around Rs. 11,000 million per year at the moment. This is expected to go up to Rs. 27,500 million by the year 1989-90 and Rs. 50,000 million per year by the turn of the century. A cumulative saving of Rs. 3,00,000 to Rs. 3,50,000 million can be made by effecting one-time investment of around Rs. 10,000 million in energy conservation measures in industry.

National technology missions identified

Drinking water, immunisation, illiteracy removal highlights

As directed by the Prime Minister, five major societal missions, referred to as National Technology Missions have been identified. These are: provision of drinking water; removal of illiteracy; increased availability of edible oils; mass immunisation; and better communication.

In addition, eight science and technology projects are also being implemented in a mission mode. There are: (i) Immunological approaches for fertility control; (ii) Development of immunodiagnostics; (iii) Cattle herd improvement for higher productivity, better strains and disease resistance using techniques of embryo transfer technology (ETT); (iv) Establishment of pilot plant for amorphous silicon solar cells and modules of one MW capacity; (v) Operationalisation of the National Natural Resources Management System (NNRMS) and Natural Resources Data Management System (NRDMS); (vi) Integrated vector control in different parts of the country against Malaria, Filariasis and other vector borne diseases; (vii) Control of Iodine deficiency disorders; and (viii) setting up of National Medium Range Weather Forecasting Centre and Development of Agro-Meteorological Services.

Presentation on three projects were made in New Delhi on October 23, 1986, in presence of the Prime Minister, Shri Rajiv Gandhi, who presided over the Consultative Committee Meeting for Scientific Departments.

Given below are highlights of the important decisions taken by the Government recently and conveyed at the meeting:

Immunodiagnostic

The Department of Biotechnology has launched a Rs. 15 crore S&T project for producing immunodiagnostic agents required for country's health care programme against communicable diseases and population growth. Under the project, new and effective immunodiagnostic techniques relevant to the diseases prevalent in India will also be developed.

The time frame for the implementation of the project is three years. During this period the project will cover the following areas: (i) Early detection of pregnancy, (ii) Development of radio isotopic immunoassays kits for detecting steroidal harmones, contraceptive steroids and harmones-related fertility regulation; and (iii) ten communicable diseases, namely, Leprosy, Tuberculosis, Typhoid, Malaria, Amoebiasis, Hepatitis, Filariasis, Rota virus, Viral Hepatitis, and AIDS.

Substantial progress has already been made towards the development of four immunodiagnostic kits, namely, Amoebioasis detection, Leprosy detection, Typhoid detection, and Early pregnancy detection.

Embryo Transfer Technology

The Members were informed that the Department of Biotechnology has initiated a new S&T project called Embryo Transfer Technology (ETT) for multiplying high yielding cows and buffaloes rapidly; for producing superior progeny; for evolving better breeds of draft animals; and for conserving finer specimens of animals which are nearing extinction.

Embryo transfer is the technique of collecting fertilized egg from a female, commonly known as "Donor", and its transfer to another female, known as "Recipient", which acts as a foster mother to the growing calf till it is born. A cow in its productive life can produce six to seven calves under normal conditions whereas by using ETT nearly 150 progenies can be produced from one donor cow.

The project is being implemented by the National Dairy Development Board. An embryo transfer laboratory has been established at Sabarmathi Ashram Gaushala near Ahmedabad. Top quality high yielding buffaloes of Mehsani and Surti breeds and cross breeds of Kankrej with Holstein and Jersey have been stationed there.

The total cost of the project is about Rs. 18 crore.

Major objectives of the project are: Standardisation of ETT in cows and buffaloes; Marketing of embryos, heifers, bulls and calves born from ETT out of the best germ plasm; Establishment of at least three regional ETT units; and research in sexing, cloning and micro-manipulation of embryos.

The programme will be implemented in two phases. In Phase I of two years duration, already initiated this year at Anand, embryo transfer techniques in cows and for the first time in buffaloes will be standardised in India. Phase II will be of five years duration from 1988-1993.

During Phase I, a herd of 150 high yielding donors and 50 recipients will be established. More than 5000 embryos will be collected and preserved for future use. In the second phase, number of donors will be increased to 200 and recipients to 750. Nearly 17,000 embryos will be collected and preserved as seed stock, thus establishing an embryo bank in the country.

Natural Resources Management

Regarding S&T project on National Natural Resources Management System, being implemented by Department of Space, the Members were informed that the targets for operational application of remote sensing included:

Agriculture (Crop Inventory, Shifting Cultivation), Forest Monitoring, Wasteland Monitoring, Environmental Monitoring (Urban Sprawl, Land Degradation), Drought Monitoring, Groundwater Targetting, Surface Water Inventory, Snow Area Mapping, Flood-affected Area Mapping, Soil Categorisation (at District level), Landuse Mapping, and Geological Mapping.

Focussed remote sensing missions have been initiated in the following areas: Crop yield, Crop stress; Forest damage, Stand Volume; Environment Impact Studies; Human Settlement; Coastal Zone Monitoring; Marine Resources; and Digital Terrain Modelling.

In addition, Indian Space Research Organisation (ISRO) and Natioanl Remote Sensing Agency (NRSA) have established infrastructure for both visual interpretation and digital analysis of remotely sensed data. For enhancing the capacity for digital analysis and training, a chain of five Regional Remote Sensing Service Centres (RRSCs) are being set up at Bangalore, Dehradun, Jodhpur, Nagpur and Kharagpur. These are expected to be commissioned in 1987.

Two similar facilities are being established by the State Governments at Madras and Lucknow. These are also expected to be ready by 1987. Establishment of two more RRSSCs as well as similar digital analysis facilities by a couple of user agencies are on the anvil.

Digital analysis systems configured around Micro Computers and Personal Computers are planned to be located at individual user's premises as part of a distributed processing system to address smaller areas.

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(Contd. from page 15)

asset, prompt repayment of loan instalments and on improving their social and economic conditions.

(6) The beneficiaries who have generated income from the scheme and repaid their loans promptly, should be encouraged by giving them a further dose of loans to improve their economic conditions.

(7) List of wilfull defaulters should be prepared and backlisted for any future benefits.

(8) Wage employment schemes should be considered under the IRDP. It can be through setting up of village artisanary industries under the supervision of some government agency. Similarly community owned projects like lift irrigation and cooperative societies can be organised under government supervision.

(9) Every year a survey of assets of the beneficiaries to be conducted to know the condition of asset as well as retention of assets.

(10) An independent monitoring body should be established at the block level and should be entrusted with the work of supervision, recovery of loans, guidance, training and evaluation. To a great extent the success of any scheme depends on its monitoring personel, who should have devotion, interest and honesty in their assignment.

Reserved for readers

Transfer of technology

Transfer of technology is essential for developing country like India for speedy integrated development. The basic aim for the transfer of technology is to keep pace with the development around the world. Technology which is obtained from other countries is used in defence, industry, agriculture and other important sectors of our economy.

Technology can be transferred through various means like foreign investment, technical collaborations, equipment supplies, turn-key jobs, seminars, and conferences, etc. In India, large amount of technology is obtained through the multinational market dominated by large MNCs. The multinatioanls are not particularly monopolists. They are oligopolistic but are able to levy monoplistic payments for technology and services. On the other hand the marginal cost of transfer of technology is very low.

In India, different industrial units obtain technology on their own. This leads sometimes to repetition in technology transfer. A particular type of technology that has been obtained by a particular firm is again obtained by the other This leads to escalated payment and wastage of valuable foreign exchange.

Why not if a centralised agency on the lines of MITI in Japan, obtains technology in India and thereafter diffusion of this technology from this agency is done. A proper monitoring of technology transfer and its usage will be possible if such a step is taken.

Mohan Kapoor,
Shimla

Counter-trade

Due to acute shortage of foreign exchange today more and more countries are turning to counter-trade arrangements for part of their foreign trade. Though the term counter-trade is relatively new phrase, it has never totally disappeared since it formed the original base of commerce centrues ago The term counter-trade refers to that range of international transactions in which some form of reciprocal purchasing obligation is associated with the export of goods or services. The various forms of counter-trade are—1. counter-purchase, 2 compensation trade, 3. buy-back, 4. industrial offset and 5. bilateral trade agreements.

Although counter-trade has been relatively rare among the developed and industrialised countries, it has become more common in trade with the third world and, above all, with state trading countries of eastern Europe. The increasing interest of the developing countries for counter-trade appears to coincide with an aggravation of their external disequlibria. For India, too the matter is becoming extremely important.

Since stage involvement in this area might contravene international treaties like GATT, autonomous organisations in India such as S.T.C. and M.M.T.C., which have nothing to do with GATT and the like fora, have started counter-trading, M.M.T.C. intends to clinch counter-trade deals worth Rs. 240 crore in 1986-87 as against 152.77 crore in 1985-86.

However, there are no set rules for this complicated and sophisticated business. It requires discussions with various concerned organisations, careful assessment of the deal and prompt decisions.

Deepak Kumar,
Delhi School of Economics,
Delhi.

Housing

Yojana, October 1—15, '86 issue was very informative regarding twenty point programme. Housing in U.S.S.R. can be put to test in India. The most important article, 'Using fluoride—a health hazard' by Dr. A. K. Susheela.

The extent of fluorotic zones and public prone to fluorosis is yet to be compiled. I hope the Government will give necessary inputs and importance to this crippling disease. Solution is in safe water supply with less than 5 PPM fluoride contents. We would not blindly follow W.H.O. standards. The Union Health Ministry must circulate these instructions to the States.

Dr. Vivek Nagar,
Golaganj, Lucknow.

Taxing the rural rich

In the Yojana issue of September 1—15, 1986, in the article 'Imperative of taxing rural rich', Dr. Kamta Prasad has estimated the effective exemption limit for rural areas for income-tax to be Rs. 30,000 per annum instead of Rs. 27,000 per annum in case of urban areas. This is attributed to the higher price which a rural inhabitant pays for education, health, entertainment, marketing, banking and transportation as compared to urban areas. But, there are more facts to be considered.

Should we not consider the higher price which the urban people pay as house-rent, vegetable, milk, etc. Moreover, as far as education and health facilities are concerned, their availability may be in doubt, but whenever they are available they are at the same rates or with marginal difference. As for entertainment, urban and rural people enjoy different types of entertainment and it is cheaper in rural areas. Because they do not aspire for theatre, night clubs or cabarets.

Marketing also is not as costly as rural people have their own living style and consumption pattern. Baking is at the same rate or even cheaper in rural areas.

Transportation, however, is a genuine problem because of which the villagers spend more than the urban people. But it is not so costly as to demand an addition of Rs. 3,000 in exemption limit. Moreover, its claim on the exemption limit is even more weakened when we take into account the much higher cost of living in the urban areas.

In contrast, the balance may be in favour of urban tax payers if such a thing happens.

Ravindra Misra,
Devpura, Hardwar

Forestry and Environment

Yojana is a magazine which basically reveals the problems and programmes of the rural India. It also touches the various aspects of agriculture, health and planning. I would like to request you to publish a regular feature on forestry and environment so as to create an awareness among the intellectuals of India. Nowadays, all sorts of health hazards, insanitary conditions and pollution are created due to lack of awareness. I believe this magazine will certainly help in this regard.

Kanhu Charan Mahali,
Dehradun, U.P.

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Carbon fibre plant to be set up

The public sector, Indian Petrochemicals Corporation Limited proposes to establish a Pilot plant for the manufacture of Carbon Fibre and a Product Application Development Centre (PADC). The carbon fibre is of strategic importance and is used in defence, space and aviation, automotive, sports goods, textile industry and for medical applications.

The proposal is to set up a 12 metric tonnes capacity plant with a capability for further expansion. At present India imports carbon fibre to meet the requirement and there is need to establish such a plant in this country. The basic raw material for this fibre is special grade acrylic fibre

Relaxation of labour laws for small establishments

The Government has set up a tripatite committee representing employers, workers and State Governments to consider exemption and relaxation of labour laws for small establishments. It is felt that there is a need for simplification and rationalisations of rules and regulations for maintenance of registers and forms for these categories of establishments.

The comittee to be headed by the Labour Secretary, Shri Badal Roy will consider the recommendations of the working group in this regard and submit its report in one month. The committee has been constituted on the basis of the recommendations made by the Standing Labour Committee of the Indian Labour Conference.

Etawa micro hydel scheme cleared

The Planning Commission has approved the Etawa Micro Hydel Scheme, estimated to cost Rs. 109.37 lakhs. It has also accepted the feasibility of the scheme and its inclusion in the State's Seventh Five Year Plan. The scheme envisages setting up a unit of 500 KW. The power generated at the power house will be stepped upto 11 KV and fed into the existing grid.

The scheme has already been cleared from the environmental angle by the Department of Environment subject to the implementation of the suggestions made by the Department. The supply of the plant and equipment will be from the indigenous sources.

New sub-stations for electricity supply to cost less

The Rural Electrification Corporation has issued a new standard relating to un-manned sub-stations which will substantially bring down the cost of rural electrification and ensure better power supply in villages. This low-cost 33|11 KV sub-station has a simple lay-out and makes use of modern and maintenance-free autoreclosers to control supply of power to 11 KV rural feeders. It requires only one-fourth of the land needed for a conventional sub-station. No skilled operators are necessary to maintain this type of sub-stations, which are widely used in advanced countries like United States and Canada. The new sub-station will cost only Rs. 10.12 lakh against Rs. 20.25 lakh for a conventional type of sub-station

The States of Uttar Pradesh and Andhra Pradesh have already decided to set up this type of sub-stations and other States are also expected to follow. It is estimated that use of this REC standard alone will result in a saving of more than Rs. 50.0 crore per year in the country.

BOOKS

Capital for industry

Risk Capital for Industry. By V. P. Chitale. Published by Allied Publishers Private Limited, 13/14. Asaf Ali Road, New Delhi-110002; Price Rs. 60/- Pages 126.

Government has, of late, been laying more and more emphasis on the need for induction of high and sophisticated technology in the Indian industry. A major constraint on the road towards induction of high-technology absorption is the severe scarcity of resources. In a country, hamstrung by a constraint of funds, it is next to impossible to raise funds for 'hi-tech' ventures, as the fate of the enterprise hangs in the balance But it has to be conceded that if the country should enter the next century without losing out to others in modernisation and industrialisation, steps should be set in motion to fund risky 'hi-tech' ventures which alone hold the potential of very high rewards, if successful. The importance of venture capital for the development of new technologies is thus an important desideratum if march towards modernity and progress is not to be checked or thwarted for want of resources. The book under review attempts to scan the underlying factors for the growing shortage of equity finance for funding new industrial enterprises in the private sector during the period 1960--80. A necessary qualification to the book's contention of sluggishness of capital market needs to be inserted as the country's capital market after 1984-85 has been witnessing a buoyant phase. Problems and prospects of raising risk finance by new industrial enterprises are analysed in this book. A startling fact flowing from the book's analysis is that investments from gold and silver are fetching higher returns than investments from financial assets such as equity shares and fixed deposits. The book recommends that to get over this negative and non-productive investment series of measures should be taken. This would range from the basic reforms of stock exchanges to appropriate tax incentives for improving the returns on equity investments.

Pointing out that inflation increases uncertainty of returns from equity, the book says the introduction of purchasing power (price-linked) convertible bonds with interest payments linked to price index and dividends at current prices into such framework permits investors a partial hedge against inflation on loan component, earnings and market appreciation of assets on equity component.

A major drawback of the book is that it depicts the country's capital market state prior to the launch of the Sixth Plan when there was not a wider awareness among investing public to subscribe to the new issues or right issues of companies, both established and fledgeling ones.

Both during the course of the Sixth Plan (1980—85) and in the inaugural years of the Seventh Plan (1985—90) there had been a virtual boom in the country's capital market, bearing testimony to the inherent resilience of the country's economy. The book however is a welcome addition to the existing sparse literature on risk capital in the country.

G. SRINIVASAN

Economic philosophies

Development of Philosophical Thought in Economics by K. N. Prasad. Published by Himalaya Publishing House, Ramdoot, Dr. Bhalerao Marg, Girgaon, Bombay 400 004 First published : 1985. Pages 506. Price Rs. 225.00

Perhaps a study of economic thought by an eminent Indian economist was long overdue in the country for some time. And this book fills in the void. The more significant aspect of this publication is that it treats the subject in a very much different style, the unconventional one. The author has painstakingly tried to bring home the fact that in the writings of practically all thinkers, whichever the discipline, there are clear indications of their awareness of one another's ideas. In such books generally the usual trend is to dilate on the much beaten track by pointing out that such and such economists were influenced by such and such thinkers of other disciplines—social sciences, of natural, or biological sciences. Barwin, for example, said to have taken his cue from Malthus and Max Weber from Hume. But in what sense, the author asks ? This is seldom substantiated.

In sixteen chapters of the book, the author has discussed the economic philosophies of philosophers ranging from Heraclitus, Socrates, Saint Augustine to George, Clark, Veblen and Schumpeter. There is a useful description of the original works of all the thinkers included in this book and this is a strong point of the book Besides, the style of writing the book is lucid and the author helps the reader in fully keeping a rapport with the earlier content as he moves on from chapter to chapter.

An interesting observation made is that Lord Keynes struggled to free himself from the 'theoretical ruts' of classicists—among whom he included Marshall, Edgeworth and Pigou. He held their economics as misleading and disastrous when applied to the facts of our experience. He regretted their disregard for the cost of the ruthless struggle that brought the most successful profit-makers to the top by bankrupting the less efficient. The giraffes with the longest necks starved out those whose necks were shorter.

For Schumpeter it is said that he was neither a reformer nor interested in public policy So also, he was neither a Marxist nor a socialist. Instead, he was an objective scientific investigator with no particular axe

to grind. He was no man's pupil and he found no school. While he had natural sympathy with the heroic age of expanding capitalism, Schumpeter regarded capitalism as doomed and socialism as inevitable.

To inform the reader it may be mentioned that various chapters deal with periods of Greek and Roman philosophers, age of mercantilists, physiocrats, classical economists, age of reaction and dissidence, non-conformism and opposition, the historical school from List to Weber, philosophical ideas of the marginalist schools upto the period of Schumpeter.

What strikes one most is the way in which the various chapters have been written so as to make them inspiring to read further and further. The bibliography contained in the book is quite exhaustive. The book will certainly enthuse all manner of people involved in the economic thinking of philosophers spread over the world in Twentieth century and earlier.

NAVIN CHANDRA JOSHI

Handicrafts

Handicrafts of Rajasthan by H. Bhishan Pal. Publications Division, Ministry of Information & Broadcasting, New Delhi. pp 71. Price Rs. 50/-.

The very mention of the name 'Rajasthan strikes a romantic chord in many hearts. Its history replete with many episodes of valour and sacrifice, its distinct scenic beauty with golden sand, rugged hillocks with patches of greenery have captivated the imagination of people from all walks of life and from Todd to Satyajit Ray, many a celebrity made Rajasthan their subjects of creativity.

Matching its colourful landscape and history the handicrafts of Rajasthan are the proud heritage not only of the people of Rajasthan but of the whole country and Rajasthan has rightly been called the 'treasure trove of Indian handicraft'. The author, a very experienced hand in dealing with Rajasthan (he has three more scholastic works on various facets of Rajasthan to his credit) has presented the history of Rajasthan's handicrafts down to the present time in a lucid style. The book is divided in 12 chapters plus four more on annexures, bibliography etc. It has an important chapter on 'Master craftsmen' with their brief life sketches and contains very informative annexures. Each chapter devoted to a particular area like 'jewellery'. 'pottery' bring out in detail its typical characteristics.

Publication Division of the Ministry of Information and Broadcasting should be congratulated for publishing this informative book. One, however, would have liked to see all the photographs included in this book in colour (majority of the photographs are in black & white) which would have presented the intricate pattern and colour mixing, etc. in bolder relief. Sharper transparencies should have been used for the coloured photographs which look somewhat faded. This probably is the only snag in an excellently produced book.

P. GHOSH DASTIDAR

Peeping into past

General Zorawar Singh by Prof. Sukhdeo Singh Charak. Published by Publication Division, Ministry of Information and Broadcasting, Government of India. Patiala House, New Delhi. First published in 1983; Pages 130. Price Rs. 12.00.

General Zorawar Singh is a familiar name particularly in Jammu region. The heroic expeditions of this 19th century General are popular subjects of the ballads sung by bards in Jammu region and the folk songs of the people with pride and fancy. His expeditions in Ladakh and Tibet regions have excited nation wide interest after aggravation of sino-Indian border dispute. This book written by Prof. Sukhdeo Singh Charak of Jammu University goes deep into the historic campaigns of the General locally known as Wazir Zorawar Singh Kalhuria since the days of his notable conquests.

Divided into eight chapters, the book gives very interesting details of the early life of Zorawar Singh. It also reflects the socio-political condition in the Jammu region prevalent at that time. The author has given fascinating account of how the upcoming and adventurous Zorawar Singh rose from an ordinary soldier to a confident General of Maharaja Gulab Singh of Jammu for whom the great fighter undertook daredevil expeditions to almost unpenetrable terrain north-east of the then seat of power and became instrumental in expansion of the Jammu principality of the Sikh empire of Maharaja Ranjit Singh.

Dealing with General Zorawar Singh's personality, the author has given an analytical assessment of his war strategies and counted his scrupulous adherence to the main principles of war, mobility, political ability and very simple way of his personal life. The great warrior lived on his meagre pay and never made money from his campaigns or accepted any bribe or presents. Looting and pillaging were unknown to his soldiers for his punishments were exemplary. Although Zorawar Singh was a terror to his enemies, he never harassed or converted the subjugated people nor destroyed their religious places.

The book brought out in simple prints and paperback binding is illustrated by several supporting maps. Although very rich in contents, style and information, it leaves much to be desired in so far as presentation, illustration and layout are concerned. However, the author's efficient handling of the interesting subject makes the book an excellent asset.

R. S. SHUKLA

Planning Commission advisory group on consumer industry

The Planning Commission has constituted an Advisory Group on Consumer Industries under the chairmanship of Shri V. G. Rajadhyaksha, a former Member of the Commission.

An important objective of the industry sector in the 7th Plan is to ensure adequate supply of goods and articles of mass consumption at reasonable prices and of accepted quality. Modernisation of consumer industry, improvement of product design and marketing outlets also deserve consideration.

The terms of reference of the Advisory Group are .

—To review the demand pattern for the more important consumer goods by 2000 A.D

—To examine the present status and technology of the consumer goods industry and suggest immediate areas for modernisation and acquisition of right technologies

—To recommend long-term policy framework including fiscal measures for achieving the objectives of the 7th Five Year Plan and the long-term goal for this sector

—Recommend measures necessary for improving the quality, reliability and design of consumer goods.

—To identify bottlenecks and specific problems in the proper distribution, marketing and servicing of consumer goods and suggest measures for overcoming the same

—To examine adequacy of present consumer protection system and recommend measures for strengthening it.

Other members of the 13-member Group include Shri K.C. Pandeya, Secretary, Department of Civil Supplies; Shri P.R. Latey, Secretary (Technical Development) and Director-General (TD); Shri P. Murari, Additional Secretary, Department of Industrial Development and Shri K R Parameswar, Director General, Indian Standard Institution.□

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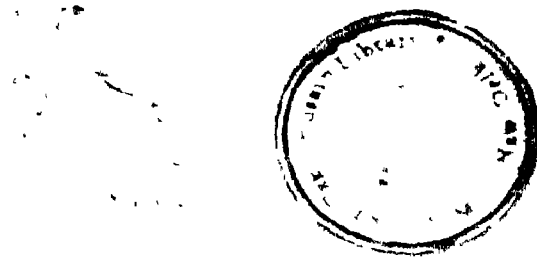
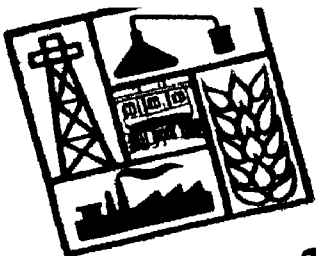

Sikkim leads in implementing 20-Point Programme

THE HILL STATE OF SIKKIM has claimed the first position at the end of the first five-month period in the current financial year terminating on August 31, 1986 in achieving the targets fixed for the 20-Point Programme. Himachal Pradesh, another hill State, which led the table at the end of first quarter (April to June) has been relegated to second place. Andhra Pradesh in the Southern Peninsula has maintained its third position. However, another State Madhya Pradesh has jumped from 6th place and joined Andhra Pradesh to share the third place. Punjab continues to occupy 5th place while Haryana has come a long way from number 11 at the end of the first quarter to be bracketed with its neighbour Punjab. Uttar Pradesh, which was placed 4th at the end of June, has slipped to 8th position.

The above assessment was made by the Ministry of Programme Implementation on the basis of the data received of the 20-Point Programme being implemented by the respective State Governments. The ranking is decided on the basis of the number of items being implemented by a particular State. A maximum number of 17 items form the basis of assessment. Only [illegible] States are implementing all the 17 items. Other States have taken up lesser number of items ranging from 8 to 16.

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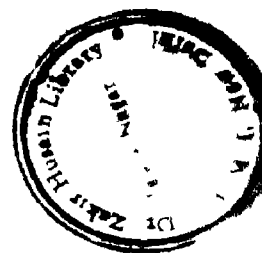
Annual Plan
for 1986-87

NEXT ISSUE

Wasteland
development

Strategy for horticulture development

A STRATEGY HAS BEEN WORKED OUT and more funds allocated for the development of horticultural programmes during the remaining period of the Seventh Plan. Special thrust is being given to develop horticulture to improve the nutrition quality of life. The Government has also included in the New 20-Point Programme intensification of cultivation of fruits and vegetables and augmenting of facilities for modern storage, processing and marketing of perishable agricultural produce.

To provide impetus to the growth ot horticulture industry and to put it on a sound footing, allocation of funds to the National Horticulture Board has been raised from Rs. 5 crore to Rs. 30 crore for the Seventh Plan. Funds for the Horticulture Division of Agriculture Ministry have also been raised from Rs. 25 crore to Rs. 58 crore to boost development programmes.

The National Horticulture Board, set up on the recommendations of the Group on Perishable Agricultural Commodities headed by Dr. M. S. Swaminathan, has been able to create an impact in the past one year by launching various programmes.

The Board has also sanctioned a pilot project for 'Development of Horticulture in U.P. Hills' A scheme for setting up low-cost, energy efficient, passively cooled point stores in rural areas has been approved to minimise post-harvest losses during peak season.

The Board proposes to take up programmes for increasing productivity by helping in rejuvenation of uneconomic orchards. In addition to laying emphasis on marketing of produce, the Board will lay stress on transfer of technology for increasing production. It will assist in visits of farmers to leading research institutes in the country. □

// YOJANA

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Annual Plan for 1986-87 at Rs. 39,052 crore

Rural development gets major share

THE ANNUAL PLAN FOR 1986-87 has been fixed at Rs. 39,052 crore. This comprises Rs. 22,300 crore for the Central Plan (showing an increase of 20.5 per cent over the approved outlay 11 per cent of the revised estimate for 1985-86), Rs. 873 crore for Union Territories (showing a step-up of 36 per cent over the previous year) and Rs. 15,879 crore for States (showing 21 per cent step-up over the approved outlay and 15 per cent over the revised estimate for 1985-86). The maximum increase is for the rural development sector which gets more than 51 per cent step-up over the outlay fixed for 1985-86. This was stated in the Annual Plan for 1986-87 which was laid on the table of the Lok Sabha on November 7, 1986. The document expected that domestic resources would finance 80 8 per cent of the Plan outlay while the net inflow from abroad would take care of another 9 8 per cent. The remaining 9 4 per cent of Plan outlay would be met through deficit financing.

The Annual Plan lays emphasis on the implementation of area-specific and beneficiary-oriented anti-poverty programmes in order to generate additional employment and incomes for the weaker sections of the society. Stress has also been laid on improvement in productivity through better capacity utilisation, greater efficiency in the use of resources, upgradation of technology and timely completion of on-going projects in an advanced stage as well as those which can be completed quickly in order to realise the benefits from the investments made

Boost in exports

The Annual Plan envisages measures to improve expected long-term profitability of exports so as to induce well-equipped firms to plan for accelerated growth of their export operations. It also calls for the continuation of the high priority accorded to exports and further efforts to improve and expand export related infrastructure facilities. Alongwith specific measures to facilitate efficient import substitution, it places emphasis on better utilisation of capacity in steel, fertilizers and other key industries The Annual Plan underscores the importance of counter-inflationary demand management policies for ensuring viable balance of payments position

Focus on agriculture

The annual plan document points out that despite unfavourable monsoon, agricultural production in 1985-86 is estimated to have been higher than in 1984-85 There is also a substantial augmentation of infrastructural facilities In particular, railway transport showed a marked improvement. Industrial production rose by 6.2 per cent. The gross domestic product in real terms is estimated to have gone up by over 4 5 per cent in 1985-86 as against 3.7 per cent in 1984-85.

The document further says that the total production of foodgrains in 1985-86 is estimated to be at 150.5 million tonnes as against 146 2 million tonnes in 1984-85. As compared to the target, however, there was a substantial shortfall As for commercial crops, the production of jute and mesta in 1985-86 is estimated to be at a record level of 12.4 million bales, showing an increase of about 55 per cent over the preceding year The estimated production of cotton and sugarcane also showed a marginal improvement over the preceding year. However, the oilseeds output is estimated to have been lower by 14.5 per cent.

Vigorous efforts to increase agricultural production and productivity continued during 1985-86. An additional irrigational potential of 2.22 million hectares was created during the year and the additional utilisation of irrigation potential was 1.69 million hectares. Similarly, despite unfavourable monsoon, the consumption of fertilizers increased from 8.21 million tonnes in 1984-85 to 9.03 million tonnes in 1985-86, representing an increase of 10 per cent.

The Annual Plan document says that consistent with the objectives of the Seventh Plan, the accent during 1986-87 will continue to be on food, employment and productivity. Since infrastructure is a prerequisite to economic growth, high priority has been given to its development and about 44 per cent of the total Plan outlay has been allocated for energy and transport. In view of the Government's commitment towards the alleviation of poverty and availability of substantial food stocks, it is proposed to give added attention to anti-poverty programmes. Substantial provisions have also been made for human resource development, agriculture and allied activities, irrigation, fertilizer production, etc.

With a view to increasing production and productivity, reducing regional imbalances and alleviating poverty and unemployment, emphasis has been placed on the implementation of certain special agricultural programmes. For stepping up production of rice in the Eastern Region, a Special Rice Production Programme was taken up in 1985-86 so as to lay emphasis on the development of basic physical and infrastructural facilities in this region. The major components of the Programme consist of training, distribution of input mini-kits, raising of community nurseries and supply of pesticides, irrigation and drainage facilities.

Oilseeds, particularly edible oilseeds, present another case of supply lagging behind demand thus necessitating imports and putting a heavy burden on the country's scarce foreign exchange resources. The annual plan document proposes to recast the National Oilseeds Project so as to lay emphasis on strengthening the key institutions responsible for providing various services such as inputs, extension, credit, etc. to the farmers. Location-specific strategies will be formulated for each of the major oilseeds.

Irrigation

The annual plan document says it is proposed to create an additional irrigation potential of 2.42 million hectares during 1986-87 and increase the utilisation of irrigation potential by 1.84 million hectares. In the case of major and medium irrigation, priority will be given to the on-going projects which can be completed quickly. New projects will be taken up only in respect of medium irrigation in drought-prone, tribal and backward areas.

Infrastructure

The annual plan document says considerable emphasis was placed on the development of the infrastructural sectors of energy and transport. Coal despatches, electricity generation, goods traffic carried by railways and cargo handled at major ports showed a substantial increase.

The performance of railways showed a remarkable improvement, according to the document. The revenue-earning goods traffic carried by railways registered an increase of 9.5 per cent as against the average growth rate of 4.1 per cent per annum during the Sixth Plan period and growth of 2.7 per cent in 1984-85. The cargo handled at major ports showed an increase of 12.5 per cent as against an annual average growth of 6.3 per cent achieved during the Sixth Plan and of 6.5 per cent in 1984-85.

The provisional index of industrial production for 1985-86 shows an increase of 6.2 per cent. While it is lower than the Plan target of 7 per cent, it is significant to note that the industrial growth rate has been rising steadily since 1983-84. The manufacturing sector recorded a growth rate of 5.8 per cent in 1985-86, electricity generation of 8.6 per cent and minimum mining of 4.6 per cent. The index of industrial production, however, does not reflect fully the growth in the industrial sector due to the inadequate coverage of small units and industries in the newly emerging high growth areas, e.g. electronics.

As compared to the targets, the performance in a number of industries was quite impressive. The production exceeded the targets in the case of crude oil, petroleum refining, steel, zinc, certain types of machinery, phosphatic fertilizers, bulk drugs and formulations, tyres, jute manufacture, a number of man-made fibres, textile yarn, paper and paper products, newsprint, two-seaters, bicycles (organised sector), certain electronic items, etc. However, there were shortfalls in respect of several important items like coal, cement, nitrogenous fertilizers, motor vehicles, ship-building, certain types of machinery, sugar and mill cloth. The main constraint to production was inadequate availability of power, and in some cases, also of coal.

The document says the total electricity generation in utilities in 1986-87 is expected to be 190 billion units, representing increase of 11.8 per cent over the 1985-86 level. The share of thermal generation would be 127.8 billion units, of hydel generation 57 billion units and of nuclear generation 5.2 billion units. An additional capacity of 3,396.3 MW is expected to be installed during the year.

Anti-poverty strategies

During 1985-86, the anti-poverty programmes were strengthened and implemented more effectively.

Under the Integrated Rural Development Programme, the number of beneficiary-families in 1985-86 is estimated to be at 3 million. The employment generated under the National Rural Employment Programme and the Rural Landless Employment Guarantee Programme is placed at 288.7 million man-days and 211.9 million man-days respectively.

The document says the anti-poverty will continue to receive special attention. Under the Integrated Rural Development Programme which aims at asset endowment for the rural poor for generating self-employment ventures, it is proposed to cover about four million families in 1986-87.

Under the National Rural Employment Programme which aims at creating additional wage employment opportunities in rural areas while simultaneously creating community assets, it is proposed to provide employment for 250 million man-days during 1986-87. The Rural Landless Employment Guarantee Programme, which is another important component of the anti-poverty strategy and aims to provide guaranteed employment to at least one member of every rural household upto 100 days in a year and create durable assets to strengthen the rural infrastructure, it is expected to generate additional employment for 236 million man-days.

The annual plan document says to enhance the contribution of NREP and RLEGP to poverty alleviation, the weightage given to the incidence of poverty in the allocation of funds to the States under these programmes has been increased from 25 per cent to 50 per cent. Besides, in view of the need to encourage afforestation and to take up a massive programme of fuelwood and fodder plantation, the proportion of funds to be earmarked for social forestry under both the programmes has been raised to 25 per cent.

Trade

Preliminary data on foreign trade for 1985-86 show a sharp widening of the trade deficit to Rs. 7,951 crore from Rs. 5,187 crore in 1984-85. During the year, imports increased by about 11 per cent to Rs. 18,371 crores and exports declined by 8 per cent to Rs. 10,420 crores. Net of oil swap, exports increased by about 3 per cent in rupee terms, reflecting lower than the targeted real growth over the year.

Outlay

The revised estimate of Plan outlay for 1985-86 at Rs. 34,219 crore consists of Rs. 20,094 crore for the Centre and Rs. 14,125 crore for the States and Union Territories. As compared to the original outlay, the revised estimate is higher by Rs 1,594 crore in the case of the Centre and by Rs. 386 crore in the case of States and the Union Territories. □

ILO/UNFPA Projects on family welfare show progress

Family Welfare acceptance would go up by 10 per cent to 25 per cent among the beneficiaries covered by the Projects undertaken with the assistance from the ILO|UNFPA, when completed. The UNFPA and the ILO experts have appreciated the excellent progress made by the Projects. The observation was made by the experts in a Tripartite Review Committee of the ILO|UNFPA and representatives of the Ministry of Health and Family Welfare which concluded its two day session in New Delhi on November 5, 1986. The Committee met under the Chairmanship of Miss M. Seth, Additional Secretary and Commissioner, Family Welfare.

Miss Seth laid stress on the vasectomy operations for Women as it was simpler and cheaper. She added that the spacing method should be encouraged and immunisation of children, maternal and child health should receive due attention.

The ten on-going projects relate to various segments of the organised sector and managed by the Textile Labour Association, State Labour Departments, Management of Tea Plantations and other Employers' Organisations. These Projects have as long range objectives, acceptance of methods of family planning by workers and their families and improvement in the quality of life of workers by a broad based education programme covering all aspects of family Welfare Programme.

It was decided to extend the Projects for longer duration seeing to their usefulness. The Committee would meet again in December 1986 to consider additional projects with ILO|UNFPA assistance.

□ □ □ □

Indo-Soviet cooperation

A protocol for the development of coal projects in India was signed between India and the Soviet Union, in New Delhi on November 7, 1986.

The coal projects to be developed with technical assistance from the Soviet Union are Mukunda Opencast Project with washeries in Jharia coalfields; Jhanjra Underground Projects in Raniganj coalfield; Nigahi, Khadia and Mohor Opencast projects in Singrauli coalfield; Sitanala Underground Project, Kumari Opencast Project in Jharia coalfields, modernisation of Patherdih washery in Jharia coalfield and Prakasham Khani 1 & 2 projects and preparation of Master Plan for Godavari coalfields of Singareni Collieries Company Ltd. in Andhra Pradesh. □

Role that domestic savings play in our economy

A.K. Sarkar and S.P. Rastogi

Domestic savings have played a major role in financing the planned investment and to sustain the growth process. A major share of domestic savings is contributed by the household sector. The average savings per annum have shown a steady rise. The incentives prescribed in the Long-Term Fiscal Policy for encouraging savings according to the authors, will go a long way in mobilising the gross savings. He is therefore hopeful that the targets of gross savings as projected in the Seventh Plan would be achieved.

IN FINANCING THE AGGREGATE INVEST-MENT, domestic saving has played the major role in mobilising resources to sustain the process of growth and development with the basic objectives of growth, self-reliance and social justice in the era of Indian Planning The size of investment which helped the growth process has been mainly determined by the quantum of domestic saving generated in the economy over the different plan periods, creating a strong base for the self-sufficiency. The percentage share of the domestic saving in total aggregate investment over the plan periods upto Sixth Plan was between 81 per cent to 96 per cent with the exception of Fifth Plan. Since there was a surplus on current account balance of payment position resulting in net capital outflow, the gross domestic saving exceeded the gross domestic capital formation during the Fifth Plan period. There have been fluctuations in the share of domestic saving in total investment. The lowest figure being 81 per cent in the Second Plan which laid greater stress on industrialisation and required heavier expenditure in terms of foreign exchange The ratio was 85 per cent in third Plan, 96 per cent in the Fourth Plan and 94 per cent in the Sixth Plan. These figures invariably bring out the magnitude of domestic saving in financing planned investment in the economy to sustain the growth process. In view of the dominant role played by the domestic saving in the economy in financing investment it is worth the attempt to study saving behaviour over the plan periods in terms of its growth, pattern of generation through major institutional sectors and lastly a view of realism in the anticipated size of domestic savings specially the rate of saving assumed in the Seventh Plan, based on the past experience.

Saving profile over the Plans

The institutionwise domestic savings generation are categorised into (a) public sector, (b) private corporate including co-operatives and (c) household sector. The savings mobilised through these institutions are ploughed back as investment in the economy. A review of the sectoral savings indicates that the major share of domestic saving is contributed by the household sector.

Table-1 presents average gross domestic savings by the institutional sectors along with their shares for the economy since 1950-51 and planwise at current prices. The average savings per annum show a steady rising trend over the plan periods. The rate of increase in savings was more pronounced during the Fourth (176 per cent), Fifth (127 per cent) and Sixth Five Year Plans (111 per cent) as compared to the Second and Third Plans which was 57 per cent and 74 per cent respectively. In absolute terms, the gross saving per annum rose from low level of Rs. 975 crores in 1950-51 to Rs. 1043 crores, Rs. 1641 crores and Rs. 2864 crores in the First. Second and Third Plan respectively. It came up

Table—1

(Average Gross Domestic Saving (at current price)

(Rs Crores)

Plan	Average	Gross	Domestic	Saving
	Public Sector	Private Corporate & Cooperative Sector	Household Sector	Total
(1)	(2)	(3)	(4)	(5)
1950-51	168	89	718	975
	(17 2)	(9 1)	(73 7)	(100 0)
First Plan	169	104	770	1043
(1951—56)	(16 2)	(10.0)	(73 8)	(100 0)
Second Plan	273	172	1196	1641
(1956—61)	(16 6)	(10.5)	(72 9)	(100.0)
Third Plan	679	363	1822	2864
(1961—66)	(23.7)	(12 7)	(63 6)	(100 0)
Annual Plans	731	413	3425	4569
(1966—69)	(16.0)	(9 0)	(75 0)	(100 0)
Fourth Plan	1341	759	5818	7918
(1969—74)	(16 9)	(9.6)	(73 5)	(100 0)
Fifth Plan	3830	1326	12856	18012
(1974—79)	(21 2)	(7 4)	(71 4)	(100 0)
1979-80	4967	2350	17386	24703
	(20.1)	(9.5)	(70.4)	(100 0)
Sixth Plan	6738	3011	28295	38044
(1980--85)	(17.7)	(7 9)	(74 4)	(100 0)

Figures in bracket show the % distribution

Source: National Accounts Statistics—Central Statistical Organisation (C.S.O), New Delhi

to Rs. 7918 crores during Fourth Plan, Rs. 18,012 crores in the Fifth and Rs. 38,044 crores in the Sixth Plan.

Sectoral behaviour of savings

It would be interesting to study if there has been a marked shift in the pattern of sectoral savings as a result of economic growth. For this purpose, shares of the three sectors in the total gross savings have been calculated. It may be seen that the household sector occupies the prominent position, while the government and private corporate sector including cooperatives remained as nominal savers. Except for the Third Plan period (1961—66), the household sector accounts for about three fourth of the total gross saving during the planning era (1951—85). It was during the third plan period (1961—66) when the share of the household sector fell below two-third and the share of the other two sectors viz., public and private corporate including cooperatives rose to 24 per cent and 13 per cent respectively as compared to 16-17 per cent and 10 per cent in the First. Second and Fourth Plan However, during Fifth Plan, the share of the public sector rose to 21 per cent and came down to 18 per cent in the Sixth Plan, while the share of the private corporate sector remained between 7-8 per cent in the last decade (1974—85). The rise in the share of the public sector may be attributed to the better performance of the administrative departments in the Third Plan period being the best performance (24 per cent) so far, while during the Fifth Plan. the performance of both administrative department and non-departmental enterprises was satisfactory.

Savings Rates

Table-2 presents the sectoral rates of gross domestic savings worked out as percentage to gross domestic product at market prices. The saving income ratio exhibited a successive improvement over the plan periods as a result of economic development. In 1950-51, the saving income ratio was only 10.2 per cent. During the First Plan period it remained at around the same level However, it picked up in the Second Plan being 12.4 per cent and rose to 14.3 per cent in the third plan (1961—66) and 17.4 per cent in the Fourth Plan (1969—74). During the Fifth Plan (1974—79) the ratio was 21 9 per cent showing a significant rise of four and a half percentage points being the highest level attained so far. This may be attributed to the better performance of both public and household sectors. Based on the provisional data available for the Sixth Plan period (1980—85) the rate of gross domestic saving is estimated at 22.5 per cent. Over the last three and half decades of planning. the highest saving ratio of 24.7 per cent was observed in 1978-79, the last year of the fifth plan Since then the ratio is declining

and it came down to 22.1 per cent in the last two years of the sixth plan i.e., 1983-84 and 1984-85. This trend needs to be arrested in mobilising resources for financing the seventh plan.

Table—2

Rates of gross domestic saving by Sectors Plan-wise. (%)

Plan Period	Gross domestic saving as percentage to Gross Domestic Product at current market price			
	Public Sector	Private corporate and co-operative sector	Household Sector	Total
(1)	(2)	(3)	(4)	(5)
1950-51	1.8	0.9	7.5	10.2
First Plan (1951—56)	1.7	1.0	7.7	10.4
Second Plan (1956—61)	2.1	1.3	9.0	12.4
Third Plan (1961—66)	3.4	1.8	9.1	14.3
Annual Plans (1966—69)	2.4	1.3	11.0	14.7
Fourth Plan (1969—74)	2.9	1.7	12.8	17.4
Fifth Plan (1974—79)	4.7	1.6	15.6	21.9
1979—80	4.6	2.2	16.2	23.0
Sixth Plan (1980—85)	4.0	1.8	16.7	22.5
Seventh Plan (1985—90) Target at 1984-85 prices	4.5	2.2	17.0	23.7

Source: National Accounts Statistics (CSO)

At the sectoral level, the household average saving rate shows a continuous rising trend during the plan periods. It rose from 7.5 per cent in 1950-51 to 15.6 per cent in the Fifth and 16.7 per cent in the Sixth Plan. The private corporate sector's average saving rate ranges between 1-2 per cent over the plan periods. In the first decade of planning it was slightly over 1 per cent while in the subsequent periods it stabilised at below 2 per cent. Like private corporate sector, the average saving rate of public sector was quite low (2 per cent) in the fifties. In the later half of seventies the performance was at the peak (4.7 per cent), while in the first half of eighties it declined to 4 per cent.

Pivotal role of the household sector

The household sector being the primary factor in the generation of the domestic saving in the economy, it will be worthwhile to analyse the financial and physical saving of this sector. The financial saving are in the form of currency, banks and other deposits, investment in corporate shares and debentures, life insurance fund, provident fund, unit trust, small savings etc. The physical assets represent investment in construction, machinery and equipment and inventories which amounts to capital formation of this sector.

The distribution of household savings in financial and physical assets is presented in Table-3. A marked shift in the saving behaviour in favour of financial saving is observed. The share of the financial savings rose from 8.6 per cent in 1950-51 to 38.6 per cent in the Third Plan. Though it remained at 33 per cent in Fourth and 37 per cent in the Fifth Plan, it touched the peak at 44 per cent in the Sixth Plan. Similarly, the savings in the form of physical assets show a declining trend. It was as high as 91 per cent in 1950-51 but came down to 56 per cent in the Sixth Plan. This shift in favour of the financial assets is an encouraging situation in view of the fact that in the scheme of intersectoral flows in the financing investment, households is the surplus sector and is in a position to divert its financial savings to other two deficit sectors viz., public and private corporate sectors for financing their investment.

Table 3

Household Sector Savings—Financial and Physical assets – Planwise.

(Rs. crores)

Plan Period	Average gross savings		
	Financial Savings	Physical Assets	Total
1	2	3	4
1950-51	62	656	718
	(8.6)	(91.4)	(100.0)
First Plan	188	582	770
(1951—56)	(24.4)	(75.6)	(100.0)
Second Plan	375	821	1196
(1956—61)	(31.3)	(68.7)	(100.0)
Third Plan	703	1119	1822
(1961—66)	(38.6)	(61.4)	(100.0)
Annual Plans	841	2584	3425
(1966—69)	(24.6)	(75.4)	(100.0)
Fourth Plan	1917	3901	5818
(1969—74)	(33.0)	(67.0)	(100.0)
Fifth Plan	4732	8124	12856
(1974—79)	(36.8)	(63.2)	(100.0)
1979-80	6088	11298	17386
	(35.0)	(65.0)	(100.0)
Sixth Plan	12538	15757	28295
(1980—85)	(44.3)	(55.7)	(100.0)
Seventh Plan	102253	113912	216165
(1985—90)	(47.3)	(52.7)	(100.0)
Target at 1984-85 prices in absolute term (Total)			

Figures in bracket show the % distribution

Source: National Accounts Statistics (CSO)

In absolute terms the financial savings were of the order of Rs. 62 crores only in 1950-51. The average saving of around Rs. 188 crores in the First Plan rose to Rs. 703 crores in the third Plan. From an average of Rs. 1917 crores in the Fourth Plan, this rose to Rs. 4732 crores in the Fifth Plan and Rs. 12,538 crores in the Sixth Plan. Thus, the financial savings in the Fourth Plan was as high as ten times of the level attained in the First Plan. In the Fifth and Sixth Plan it multiplies itself to two and half times. The increase of financial savings of such a high order may be attributed to the nationalisation of banks and their branches expansion programme specifically in rural and semi-urban areas, the rise in national income, policy packages for saving mobilisation and the growth of financial institutions.

Seventh plan estimate

The public sector Plan outlay in the Seventh Plan including current developmental outlay is placed at Rs. 180,000 crores and the gross investment Rs. 1,54,218 crores at 1984-85 prices. The total investment requirement for the economy as a whole to achieve the envisaged growth rate of 5 per cent has been projected at Rs. 3,22,366 crores. Ninety four per cent of this investment size will be financed by the domestic saving which is of the same level of realised position for the Sixth Plan based on provisional figures given by Central Statistical Organisation (C.S.O.). The average saving rates realised during the Sixth Plan comes to 22.5 per cent. In the Seventh Plan estimates, the average saving rate will be 23.7 per cent. The realisation of aggregate savings does not seem to be a difficult task if one keeps in view the rising trend in the aggregate saving rate over the plan periods. So far as the sectoral rates are concerned, the rates of household sector savings are almost at the same level as realised in the Sixth Plan. In case of the private corporate sector a slightly higher level over the Sixth Plan has been envisaged taking into account the higher investment in the private corporate sector to raise the industrial production and the recent changes in industrial trade and fiscal policies covering corporate tax reform encouraging, mobilisation of its own savings. The industrial climate is responding to these policies and it can be reasonably hoped that the rate of saving of the private corporate sector may be above the stationary level of below 2 per cent observed over the past three Plans. It can therefore, be safely concluded that there will be no shortfall in the savings of the private sector from the targeted position indicated in the Seventh Plan The incentives prescribed in the "Long Term Fiscal Policy" in the form of introducing new investment instruments like National Schemes (New Series) and other, investments in specified assets with encouraging tax concessions will be favourable for mobilising individual savings.

In the Seventh Plan the average rate of public saving has been visualised as 4.5 per cent. The average rate of the public sector savings realised in Fifth and Sixth Plan was 4.7 per cent and 4 per cent respectively. This fall in the public sector saving in the Sixth Plan is to be reckoned with concern. Though the magnitude of the level 4.5 per cent is not significantly higher than the realised level of Sixth Plan, but the seriousness of the problem is evident due to the successive fall in the rate of public savings in the last two years of the Sixth Plan. This trend is to be reversed. Ministry of Finance and the Planning Commission are making all efforts to increase the Public Savings by introducing measures to improve the built-in-revenue-raising capacity of the tax system so that the automatic growth in the revenue is greater than has been in the past. Another priority is to reduce the growth of non-Plan expenditure specially reducing expenditure on subsidies. The basic issue lies in increasing the Balance from Current Revenue (BCR) and internal generation of resources by the public sector undertakings. In the Seventh Plan public sector undertaking is to bear the maximum responsibility in reversing the falling trend of the Public Saving, raising their efficiency to a considerable extent A multi-dimentional strategy including organisational changes, better management, monitoring, financial and pricing policies are being implemented in turning the corner Taking into account all these activity packages it can be reasonably concluded that the targets of gross saving as projected in the Seventh Plan are within safe limits and achievable.

□ □ □ □

IFAD to support more projects in India

Projects of dryland farming in Madhya Pradesh, Tribal Development in Orissa and projects for the development of horticulture and fisheries have been prepared in cooperation with the International Fund for Agricultural Development (IFAD) and shall be soon made operational IFAD is a specialised agency of the United Nations set up in 1977 to mobilise additional resources to be made available to developing countries for dealing with problems of food production, malnutrition and rural poverty.

India is one of the original members of IFAD. IFAD has so far committed assistance of the order of over US $ 182 million for five projects in India They are Bhima Command Area Development Project (Maharashtra), Rajasthan Command Area Development Project (Rajasthan), Sunderban Development Project (West Bengal), M P Medium Irrigation Project (Madhya Pradesh) and Second U P Public Tubewells Project (Uttar Pradesh) □

Has green revolution made any impact ?

Dr. Arshad Mahmood

Though the immediate outcome of the green revolution was a spurt in agricultural production, particularly in crops like wheat and rice, but according to the author, it has failed to make any appreciable difference in the overall rate of agricultural growth, because the trend of agricultural growth and production before and after the green revolution do not vary substantially. The author feels the introduction of high yielding varieties alongwith new technology and fertilizers alone cannot balance agricultural production, vis-a-vis population growth. An all-round production and growth in all the crops in all the regions is the only solution.

SINCE INDEPENDENCE the agricultural sector recorded a phenomenal growth rate of about 2.7 per cent during 1950-51 to 1983-84 as compared with the meagre rate of less than 1% before 1950-51. This rapid growth in agriculture has been achieved because of the priority accorded to this sector during the successive five year plans.

Then and now

The Green Revolution which provided a big boost to Indian agriculture during the mid-sixties gathered further momentum in the following years, extending beyond the narrow base of certain regions with developed infrastructure and concentrating on basic food crops like rice and wheat.

However, there appears to be a slowing down of agricultural growth during the last decade. In the context of an accelarated population growth, this has resulted in a near stagnation in agricultural output per capita. Vaidyanathan in his study has elaborated the fact that there is a deceleration in the growth rate of output since the mid-sixties and draws this revealing conclusion : "The concern has been further heightened by the apparent slowing down of agricultural growth during the last decade which in the context of an accelarated population growth has resulted in a near stagnation of agricultural output per capita and in turn severely constrained the growth of the rest of the economy as against the target of 4.45 per cent a year since 1950-51."

H.Y.V.

The Green Revolution, as is well-known, is associated with the discovery of the High Yielding varieties (HYVs) mainly for rice and wheat and their introduction in the north-western region round about 1965. Therefore, if its impact is to be judged, we have to calculate the growth rate of foodgrain production and productivity periods prior to and after 1965.

For this reason, an attempt has been made in this paper to examine the impact of Green Revolution on agricultural production. A comparison of the situation in pre and post-Green Revolution periods has been made to elicit the impact of Green Revolution on agricultural production. As agricultual production fluctuates widely from year to year due to variations in rainfall, it is necessary to compare the average production figures. Accordingly, we have divided the years from 1949-50 to 1983-84 into two periods that is pre-Green Revolution period (1949-50 to 1964-65) and post-Green Revolution (1967-68 to 1983-84) for convenience.

Analysis reveals that the rates of growth in agricultural production as well as productivity before and after the Green Revolution periods do not vary substantially except for wheat and rice. The total output of foodgrains from 1950-51 to 1983-84 increased at the rate of 2.7 per cent per annum and this was largely due to the rise in the productivity per hectare which went up by 1.9 per cent per annum which is below the growth rate of population (2.1 per cent). But on the other side the total area under foodgrains cultivation showed a marginal increase of only 0.7 per cent per annum. Foodgrains constitute nearly 70 per cent of the gross cropped area in the country, though less than 30 per cent of area under foodgrains is irrigated. Similarly, the acrage covered under high yielding varieties of seeds accounts for 53 per cent of the total acreage under cereals Total foodgrain production rose from 55 million tonnes in 1950-51 to 151 5 million tonnes in 1983-84, and was to be 149 5 million tonnes in 1984-85. But the progress made on the agriculture front does not leave room for complacency.

According to statistics released by the Ministry of Agriculture and Rural Development, the long term exponential trend growth rate of all crops during 1949-50 to 1983-84 is 2.61 per cent per annum. During the same period, yield per hectare increased at an exponential rate of 1.42 per cent per annum. The area under HYV seeds has increased sharply by more than nineteen times. The area coverage under the HYVP increased from 1.89 million hectares in the initial year of 1966-67 to 52 million hectares in 1983-84 of which the target for paddy was set at 25 million hectares and for wheat at 19 million hectares. This is no doubt a big increase, but as a proportion of net sown area, it is very modest at about one third. The crops benefiting from it are few, largely wheat and rice and to some extent maize, Jowar and Bajra But area distribution among them is grossly unequal.

Downward trend

Looking at the performance of agricultural sector from a long term angle, it can be seen from Table (1) below that the rate of growth of agricultural production has been slowing down in the last decade. In th context of an acceleration of population growth, th has resulted in a near stagnation in agricultural ou put per capita. However, the rate of growth of agr culture production from 1949-50 to 1964-65 was 3 per cent and from 1967-68 to 1983-84 was 2.6 p cent. The rate of growth of foodgrains was 3.5 p cent in 1949-50 to 1964-65 and 2.5 per cent in 196 68 to 1983-84. Similarly, the rate of growth of acr age of all crops under cultivation decreased from 1 per cent per annum between 1949-50 and 1964-(to 0.4 per cent per annum between 1967-68 and 198 84. Whereas, the rate of growth of foodgrain produ tivity increased from 1 4 per cent per annum betwe 1949-50 and 1964-65 to 1.9 per cent per annu between 1967-68 and 1983-84.

Table I

A Comparison of Agricultural Growth Rate between

1949-50 to 1964-65 and 1967-68 to 1983-84

Item	Annual Trend Rat of Increase Percentage	
	1949 50 to 1964-65	1967-6 to 1983-84
1	2	3
A. Foodgrains :		
(i) Area	1 4	0 :
(ii) Production	3 0	2.5
(iii) Productivity	1 4	1 9
B. Non-Foodgrains		
(i) Area	2 5	0
(ii) Production	3 5	2.
(iii) Productivity	0 9	1
C All Crops :		
(i) Area	1 5	0.
(ii) Production	3 1	2.
(iii) Productivity	1 3	1.

Source : Agricultural production in India statewi e a cropwise data, Feb. 1985. CMIE.

New technology help

With the application of the new technology in t form of improved varieties of seeds, the increased t of fertilisers and other modern inputs, the rate growth of foodgrain potential went up and as a sult, the rate of growth reached to a level of 2.7 cent in 1968-69. Since then it has again show gradual deceleration to 2 0 per cent by 1982-83. T annual increase in foodgrains production potential below the growth rate of population (2.1 per cent annum) during this period. Per capita foodgrains p duction appears to have been more or less stagn in the last few years. It is interesting to obse though the growth rate of agricultural production been less in the post-Green Revolution period th during the pre-Green Revolution period, the prod tivity growth rate has been higher in the same peri

2. Economic Survey, 1984-85, Ministry of finance. Government of India.

f these only wheat and rice achieved annual growth ' more than 2 per cent in productivity. In spite of ıe gains in productivity, the yield rate of all crops cluding wheat is much below the world average. owever, in some parts of the country like Punjab, aryana and Western Uttar Pradesh, the yield rate ' wheat has almost reached the world standard. gain, in some parts of Andhra Pradesh, Tamil Nadu, ınjab and Haryana, the yield rate of rice is quite gh much above the all India average*. An important sult of the slow growth in foodgrains production that there has been only a marginal improve- ent in the per capita availability, which is still ɔt adequate.

The variations

The great variation in agricultural growth across fferent parts of the country presents another major t of problems. Regional as well as crop wise im- ılances in agricultural production are still persist- g in the country. This can be seen from the data at the rise in foodgrains output from 1979-80 to)83-84 was 41.8 million tonnes of these increase rer two thirds came from the major producing states ımely, Uttar Pradesh, Punjab, Andhra Pradesh, aryana, Maharashtra and Madhya Pradesh. Yield r hectare in the traditional rice cultivating regions ıs lagged far behind and requires to be stepped up. ıce output in the eastern states such as Orissa, Bihar ıd West Bengal accounted for 10.9 million tonnes 1982-83, i.e. 23.5 per cent of the country's total ce output and 35.3 per cent of the total acreage ıder rice cultivation in the country. As compared to is, non-traditional rice sowing states, namely, Pun- ɔ, Haryana, Uttar Pradesh and Rajasthan accounted r nearly 24 per cent of total rice production and ɔre than 18 per cent of the total area under rice ltivation. Even, in the case of wheat there has been de regional disparities in productivity. According an estimate, annual growth-rate of crop production ring 1960—78 averages around 2.8 per cent in the untry as a whole. But at the state level Orissa achi- ed half or less than the national rate while Punjab- aryana recorded nearly two and a half times the erage. While for the country as a whole, prodution ɛw faster than population by a modest amount, ɔwth was below 2 per cent per annum, that is, less an population growth in as many as seven of the ıjor states. The range of variation is even greater the district level. During the sixties, 67 districts accounting for about a fourth of the countrys cultivat- ed area experienced a decline in output; while in as many as 136 districts with half the country's culti- vated area, output growth was less than 1.5 per cent per annum (which in most cases is probably less than rural population growth). At the other end, 73 districts accounting for 25 per cent of the total land recorded better than 3 per cent per annum, there be- ing hardly 30 disricts which recorded 4.5 per cent per annum. Agricultural production and its growth rates cropwise and state-wise is mentioned in Table (2).

*In terms of yield, India stands fifth among the major wheat producing countries in the world its average yield of 1714 Kg per hectare is 14.8 per cent less than the corresponding world average and about two-third of the average yield of China, which occupies the first position. In the case of paddy India's average yield is only 1938 Kg. per hecatare which is 13 3 per cent less than the world average. *Economic Survey*, 1984-85, Ministry of Finance, Government of ,India New Delhi.

Table-2

Regional pattern of Growth of Production of Principal Crops in India, during 1962-65 to 1970-73 and 1969-72 to 1981-84.

(per cent for annum)

States	Total 1962—65 to 1970—73	Agricultural Production 1969-72 to 1981-84
1	2	3
1. Southern States		
Andhra Pradesh	(—)0 60	3.31
Tamil Nadu	2 47	1 12
Karnataka	3.66	2 44
Kerala	2 02	0 23
2. Eastern States		
Assam	2 54	1 96
Bihar . .	0 54	0 49
West Bengal	2 42	0.91
Orissa	(—)0.30	2.28
3. Central States		
Gujarat	1 95	3.92
Maharashtra	(—)3.77	5.59
Rajasthan .	5 10	2.47
Madhya Pradesh	1 39	1 65
4 North Western States		
Haryana . .	5 73	3.31
Punjab	7 91	3 92
Uttar Pradesh	2 94	3 10
All India	1 95	2.37

xGrowth rates are taken from Bhalla-Alagh Study· Performance of Indian Agriculture—A District wise study Sterling Publication, 1976.

**Growth rates have been worked out by fitting a trend line on Indices of agricultural output constructed for each states based on production of 49 commodities. The Indices have been prepared by the commission Agriculture costs and prices

Source : G.S. Bhalla, Indian Agriculture since Independence, Secular Democracy, Republic Day Annual, 1986, January-February 1986.

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On reducing poverty speedily

Arabinda Ghose

The Integrated Rural Development Programme, according to the author, is the sheet anchor of the poverty alleviation measures. But the investment per beneficiary family under it is rather low and he feels that all those below the poverty line have to be given a supplementary dose of assistance to enable them to cross the line. The author also calls for reduction in the multiplicity of programmes for achieving the same goal and feels such programmes can be integrated under single authority at the Centre and the States to the extent possible.

THE GREEN REVOLUTION in India during the late sixties and early seventies transformed India from a country living from "ship to mouth" to one now in a position to export foodgrains. This revolution has won acclaim all over the world and many countries in the developing world are keen to replicate this in order to become self-sufficient in foodgrains.

Abundant food

However, official surveys conducted during the period of the Green Revolution have revealed a peculiar trend. Despite the abundance of availability of foodgrains, rural poverty remained where it was before the onset of the Revolution. This showed that mere availability of foodgrains or new avenues of employment generated by the five year plans did not necessarily result in prosperity trickling down to the economically lowest strata of the population.

Anti-poverty measures

That is why during the Sixth Five Year Plan a decision was taken to make a frontal attack on poverty directly and not to wait for the benefits of prosperity found in the upper strata of the society to trickle down. This gave rise to various antipoverty measures such as the Integrated Rural Development (IRDP), the National Rural Employment Programme (NREP), the Rural Landless Employment Guarantee Programme (RLEGP), the Training of Rural Youth for Self Employment (TRYSEM), the Desert Development Programme (DDP) and the Drought Prone Area Development Programme.

Subsequent surveys have shown that the percentage of people below the poverty line had decreased during the Sixth Five Year Plan indicating that the aproach of the Government in directly attacking rural poverty has paid dividends.

Later, the Rural Water Supply scheme was transferred to the Department of Rural Development which has now set up a technology mission for this purpose. As a subsidiary to the IRDP, the Development of Women and Children in Rural Areas (DWCRA) has also been taken up by the Ministry

The IRDP

The Integrated Rural Development Programme, extended to all the development blocks in the country since October 2, 1980, is the sheet anchor of the poverty-alleviation measures and a great deal of attention has been paid to it both for its success and lack of it in some respect. Beginning from the Seventh Plan period (1985—90), the Department of Rural Development has undertaken an evaluation which is carried on simultaneously with the implementation of the IRDP itself so that on-the-spot detections of aberrations can be made.

Low investment !

One of the most important findings of this concurrent evaluation is that the investment per beneficiary family under the IRDP has been rather low, particularly in view of the fact that the poverty line has now been re-drawn at an annual income of Rs. 6,400. It was previously Rs 3,600 only. As a result, a large section of the families which had received loans and subsidy during the Sixth Plan in order to enable them increase their income by exploiting assets acquired by such assistance, did not actually cross the poverty line. All of them have to be given a supplementary dose of assistance so that they crossed the poverty line and the investments already made on them did not go waste.

In fact, this trend is visible in the Seventh Plan also Addressing the conference of State Ministers in charge of Rural Development in New Delhi recently, the Union Minister of Agriculture and Rural Development, Mr G S. Dhillon gave a warning that if the investment per family did not go up substantially, almost 80 per cent of the beneficiaries during the Seventh Plan period would not be able to cross the poverty line They might, as a result, be required to be given a supplementary dose during the Eighth Plan too This would virtually defeat the purpose of the programme, and would also result in tremendous loss to the country because the investments on the programme would go waste.

The 20 Point Programme

Poverty alleviation programmes have received a further boost in recent months by its being given top priority in the Twenty Point Programme, 1986. As the Prime Minister observed, the "and poverty programmes constitute the core of the Twenty Point Programme", under which, he added, "the war on poverty is our first priority "

Why loans and subsidy ?

It is in this context that the question is often asked if it is worthwhile to provide loans and subsidy to the poor in order to raise them above the poverty line. This, despite the fact that during the Sixth Plan period, more than one crore sixty lakh families were assisted, a large number of whom have crossed the poverty line. The experience during a limited survey of IRDP|NREP beneficiaries in some districts of Rajasthan and Madhya Pradesh recently has been that IRDP and NREP do help alleviate poverty if properly implemented, the stories of leakages of assistance are largely exaggerated, and there are much lesser number of wilful defaulters in repayment of loans than is made out by some.

The green revolution, rapid industrialisation, vast expansion of communications facilities, and massive investments in the core sectors of the economy have left the rural poor untouched. Yet just a couple of thousand rupees in loan and a few hundred rupees in subsidy has worked wonders among this section of the rural society. Milch cows, draught animals, sewing machines, irrigation pumps, land, and even implements for starting a barber's shop, which might seem insignificant to an urbanite, have vastly improved the earnings of those assisted under IRDP.

These poor people, who can provide no security for bank loans, are the most prompt in repayment. If even after all these they did not cross the poverty line, the fault often lay elsewhere. The main reason in the shortfall in the target is inevitably the inadequate investment on them, as indicated earlier. At present, the ratio between investment and generation of assets is 2.7 to 1. That is, in order to create an asset for an IRDP beneficiary worth 1,000 rupees, a sum of 2,700 rupees has to be invested. Since the maximum investment at this stage is only a few thousand or even a few hundred rupees per family, one can gauge why some beneficiary families still remain steeped in poverty.

Allocate more funds

Thus more funds have to be provided for the IRDP and other poverty alleviation programmes because the beneficiaries are as much citizens of India as the urban rich and the middle classes and have every right to state assistance to improve their lot.

In course of time they too would be able to contribute to national economy and would cease to be what many would call a burden on the society.

Multiplicity of programmes

All said and done, however, one cannot be complacent and declare that the poverty-alleviation programmes are running smoothly and everything would become well if more funds are pumped into the programmes. This is not so. Apart from the fact that leakages still occur and malpractices are still rampant, one feels that there are far too many progrmmes for achieving the same goal. This creates complication at the field level, with different agencies having different norms of extending assistance and monitoring. Often programmes work at cross purposes.

Although there is now a nodal department of Rural Development under the Ministry of Agriculture

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Our irrigation policies need revamping!

B. B. Vohra

Our biggest failure, says the author, has been to give a much lower priority to afforestation and the problems of land management than to big irrigation projects with the result that the country is today faced with unprecedented crises created by recurring floods and droughts. Our irrigation policies, he laments, are almost obsessed with the creation of potential as if this was an end in itself, and are not worried about its end use. These policies, he feels, will now have to be drastically revamped because today the country is left with no alternative but to use its scarce resources in the most cost-effective ways available to it.

Addressing the Conference of State Irrigation Ministers recently, the Prime Minister, Shri Rajiv Gandhi, observed as follows:

> "The situation today is that since 1951, 246 big surface irrigation projects have been initiated. Only 65 out of these have been completed. 181 are still under construction. This is not a happy state of affairs. We need some definite thrust from the projects that we started after 1970. Perhaps we can safely say that almost no benefit has come to the people from these projects. For 16 years we have poured money out. The people have got nothing back, no irrigation, no water, no increase in production, no help in their daily life. By pouring money out to a few contractors or a few thekedars and labourers to build canals and may be Public Works Departments to construct the dam, we are not really doing our people a favour. The favour comes when the project is completed, when the benefits of the project start flowing.

Irrigation policies in a mess!

2. This is a pretty damning indictment, especially as it comes from the Prime Minister. Although similar views have been voiced in the past, our irrigation establishments have, by and large chosen to ignore them. This option is, however, not available to them any longer, here is now bound to be an agonising re-appraisal of the polices and attitudes which have landed big irrigation projects into a mess. In the re-ordering of priorities which will follow such an exercise, it will become necessary to give greater consideration to certain very important issues which, however badly they may have been neglected in the past, it will be impossible to ignore any longer. If the health of this sector of public investment is to be restored, some very hard decisions will have to be taken in at least five major areas.

First and foremost is the question of closing the unbelievably large gap between the irrigation potential of 20.8 million hectares (mh) created between 1951 and 1985 at a cost of Rs. 15,206 crores and the potential of 15.6 mh which was actually 'utilised' by

the end of that period. The creation of an additional capacity of 5.2 mh which incidentally represents fully 25 per cent of the total potential created in the last 34 years, would today require an investment—at the going rate of around Rs. 30,000 per hectare—of over Rs. 15,000 crore. It would obviously make better economic sense to put this existing idle capacity to use than to create, as is proposed, a fresh potential of 4.3 mh during the 7th Plan, at a cost of over Rs.. 11,500 crores.

Secondly, and by the same token, a high degree of priority must be given to the task of making fuller use of the post—1951 potential of 15.6 mh which, although it stands 'utilised' in the parlance of irrigation establishments, is in fact grossly under-utilised. This is apparent from the fact that our canal irrigated lands have a productivity of less than one-third of the norms which prevail in developed countries. A much greater effort will accordingly have to be made to step up Command Area Development programmes aimed at improving the efficiency and reliability of surface irrigation and ensuring is optimal use by the farmer.

Thirdly the menace of water-logging (and consequent salinisation of the soil), which has already affected around 7 mh of good agricultural lands and threatens many more, needs to be viewed with extreme seriousness, and not pushed under the carpet. Lands which require drainage to maintain their productivity must be provided with it however high the cost-on an average over Rs 10,000 per hectare—may be. For we cannot, on any account, permit the blessings of canal irrigation to be turned into a curse and allow our renewable resources of water to damage our non-renewable resources of land

Fourthly our costly and irreplacable reservoirs which represent not only valuable irrigation potential, but very often hydel and flood control potential also, must be saved from the hazards of premature siltation. To this end, time-bound programmes for afforestation and soil conservation in the concerned catchments must be drawn up and implemented vigorously. It is necessary to point out in this connection that out of the 22 odd mh which are critically eroded—in the total catchment area of 69 mh of 28 of our biggest projects—less than 2 mh have been treated during the last 23 years, and that the current cost of such treatment is around Rs. 3600 per hectare.

Fifthly ways and means must be found to put an early end to the very serious financial losses which are being incurred by irrigation projects. These losses have already reached the level of around Rs 800 crores per annum and are a measure of the sickness of this sector.

Meagre allocations !

3. It hardly needs to be pointed out that if the first four tasks mentioned above are to be accomplished within a reasonable time-frame the funds required for them shall have to be found from within the allocation which has been made for this sector, but which today stands almost entirely pre-empted by programmes for the creation of additional potential. Thus, in the 7th Plan, out of a total provision of Rs. 13,227 crores for big irrigation projects, as many as Rs. 11,556 crores or over 87 per cent stand earmarked for the creation of new potential and only Rs. 1,671 crores for Command Area Development programmes. There are no allocations at all for the control of either sedimentation or water logging. Believe it or not, the 7th Plan also envisages that there will be an unutilised potential of 5.6 mh in 1990—a figure which is even higher than the 1985 figure of 5.2 mh !

4. The basic trouble is that our present irrigation policies are almost obsessed with the creation of potential, as if this was an end in itself, and are not unduly worried about its end use. These policies will now have to be drastically revamped for the simple reason that the country is left with no alternative today but to use its scarce resources in the most cost effective ways available to it.

The lacuna

5. While carrying out such an exercise it would be well to bear in mind that big irrigation projects are not the only matter that needs to be bothered about in the field of irrigation, not to speak of the total water management situation in the country. To see things in their proper perspective, it is necessary to remember that of the total 'utilised' irrigation potential of 60.4 mh which had been achieved by the end of the 6th Plan, big projects (including those completed before 1951) accounted for only 25.3 mh. while ground water accounted for 26.1 mh and small surface schemes for the remaining 9 mh. The point to note here is that the achievements of big projects—which represent a total public sector investment of something like Rs. 20,000 crores—have been already surpassed by those of the 10 odd million privately owned tubewells engaged in exploiting a resource which is a free gift of Nature. Yet, although this resource is facing grave problems of over-exploitation and depletion in certain areas, enough care is not being given either to the regulation of pumping or to the enhancement of recharge. This is a serious lacuna and needs to be rectified quickly.

6. Water management problems are, however, not confined to irrigated lands only. They also exist, though in different forms, in non-irrigated lands as well as non-agricultural lands It is necessary to mention in this connection that out of the total area of 143 mh which is under cultivation, less than 47 mh have access to irrigation of any kind. (It may be clarified here that the 60.4 mh of irrigation potential 'utilised' represent the gross irrigated area, comprising a net irrigated area of around 47 mh plus the 13 mh

or so which receive water for more than one crop every year). There are, therefore, around 96 odd mh of rainfed agricultural lands, which—if they are to raise their present pathetically low levels of productivity—will need a great deal of attention, mostly by way of protection against avoidable run-off as well as the consequent loss of the irreplaceable fertile top soil.

7. Then, there are 123 mh of non-agricultural lands. Of these only around 30 mh are under adequate forest cover and, therefore, in a position to make good use of the precipitation they receive. We must obviously take a serious interest in how we can make better use of the precipitation which falls on the remaining 93 odd mh which are denuded and eroded to a greater or lesser degree, and suffer the heavy run-off and soil losses which together constitute a major contributory cause for both floods and droughts.

8. There is also another way of viewing big irrigation projects in the correct perspective. The total volume of water which we receive annually is estimated to be around 330 million hectare metres (mhm), after excluding around 70 mmh which are lost by way of evaporation immediately after precipitation occurs. Of these 330 mhm, around 150 hmh enter the soil, which retains around 110 mhm as soil moisture and allows the remaining 40 mhm to reach deeper strata in the form of ground water. Of the total recharge of ground water, some surfaces in due course in the form of natural springs in the hills, and some is brought to the surface through tubewells, open wells, and artesian wells at lower altitudes A certain amount seeps into rivers during the lean season, and some eventually reaches the sea through subterranean flows.

9. It is the remaining 180 mhm of water—which does not find its way into the soil—that constitutes the total annual run-off of around 180 mhm in our river systems. All that our post-1961 irrigation projects have been able to do so far is to impound—never mind with what degree of efficiency and cost-effectiveness—around 17 mhm of this run-off in their reservoirs. Since this volume of water represents less than 10 per cent of the total run-off and only a litlte more than 5 per of the total effective precipitation, it would be unjustified to permit these projects to monopolise, our attention to the exclusion of much bigger issues in water management. Yet this is precisely what seems to have happened, if one was to go by the acrimonious and never-ending disputes which take place over the sharing of river waters. As if the construction of big dams across rivers is the only thing which needs to be bothered about

The water losses !

10. The time has, however, come for taking a comprehensive look at the total water scene and to get out of the habit of viewing only a small part of it through the myopic eves of irrigation establishments which are preoccupied only with the construction of dams and canals. If such an exercise is undertaken it will become clear that while the sickness of the surface irrigation sector is certainly something which needs to be attended to, it is by no means the most important task which awaits us in the total field of water management.

11. This distinction must be claimed by the overriding need to reduce the enormous losses of water which occur by way of excessive run-off in denuded water-sheds and in rain-fed agricultural lands which are neither terraced nor bunded along contours, and are often far too steep to be fit for cultivation on a long term basis. Thanks to our monsoon pattern of rainfall, it is these losses which are largely responsible for the devastating floods in the brief wet season as well as for droughts during the much longer dry season.

12. A reduction in run-off losses will automatically mean that more water will become available for retention within the land mass either as soil moisture or as ground-water. While more soil moisture will support more permanent vegetation in the form of trees and grasses, and make rainfed agriculture more productive, the enhanced recharge of ground water will revive natural springs and drying wells, support more tubewell irrigation and augment river flows in the lean season. Reduced run-off losses will also save a great deal of top-soil from erosion and moderate the incidence as well as the severity of floods.

13. It is impossible to compute the price which the community is paying for excessive run-off—and consequently also soil—losses. However, some idea of the size of the damage which is being caused to the economy as a result of such losses can be obtained from the fact that during 1985-86 alone, the States approached the Central Government for financial assistance of the order of Rs. 8000 crores for anti-drought and flood relief measures It is also known that the amount of irreplaceable top soil lost every year on account of water erosion is of the order of 12,000 million tonnes, which, even if it is given a ridiculously low notional price of Rs 10 per tonne, would represent an annual loss of Rs. 12,000 crores Of the amount of water lost there is of course no count at all. It is however, clear boyond doubt that the total price which we are having to pay for excessive run-off—and therefore also soil-losses, is of the order of several tens of thousands of crores every year, and that it is this, more than anything else, which is responsible for the chronic poverty of our people.

14. Compared to this mismanagement, the sickness of our surface irrigation projects, serious enough though it is, is a comparatively minor matter and—except for the sedimentation problem—can be left to the existing irrigation establishments to remedy on a time-bound basis. The real question which requires an answer is as to how we should reduce the excessive run-off (and therefore also soil) losses which are

bleeding the country to death, as it were. This responsibility—which incidentally will also automatically include responsibility for problems of premature siltation of reservoirs—cannot obviously be shouldered by irrigation establishments, not even if they are renamed as Departments of Water Resources. This is so for the simple reason that the work involved has nothing to do with irrigation—it pertains to the restoration of permanent vegetal cover on around 93 mh of denuded non-agricultural lands and to the treatment, from the soil and water conservation angle, of another 96 mh of rainfed agricultural lands.

The real problems

15. This brings us to the crux of the problem—which is that the management of our water resources is impossible of achievement except through the proper management of our land and biotic resources. The sooner this basic fact of life is appreciated the better it will be for everyone concerned, because there is great danger of money being continued to be spent infructuously by departments pursuing their own fragmentary objectives without relating them to other relevant factors in the total resources management situation

16. Many examples can be given of how wastefully we have spent large amounts of money in the past. Thus, Irrigation Departments have been traditionally responsible for constructing flood control works without being made responsible for preventing floods from taking place in the first instance. As a result there has been growing expenditure on dykes and bunds around flood prone cities even as water-sheds have deteriorated and the incidence as well as the severity of floods as a whole have increased enormously. In retrospect, it is clear that we should have given much higher priority to nipping floods in the bud than to controlling their ravages after they have taken place. Again, costly storages meant for impounded waters have had to share a good deal of their capacity with eroded soil merely because little attention was given to the treatment of their catchments. The failure to provide for drainage in command areas is another example of misdirected expenditure on the creation of potential without bothering about its utilisation. Yet again, costly irrigation works have been taken in hand in certain parts of the country which could have easily done without them because of the abundance of precipitation or ground water or both

17 Our biggest failure, however, has been to give a much lower priority to afforestation and the problems of land management than to big irrigation projects with the result that the country is today faced with an unprecedented crisis created by recurring floods and droughts. This is apparent from the fact that while a total investment of only Rs. 2723 crores was made up to the end of the 6th Plan in forestry and soil conservation programmes, the corresponding figure for large irrigation projects was Rs. 15,206 crores. This mistake can undoubtedly be traced to our failure to balance the powerful but unfortunately too narrowly-oriented Ministry of Irrigation at the Centre with an equally powerfull Ministry of Land Resources. In the ultimate analysis of course, all these aberrations are due to what Dr. Sudhir Sen has described as the 'resource illiteracy' of our ruling elites, due in turn to a defective system of education.

Create Ministry of Natural Resources

18. Be that as it may, it is now abundantly clear that since the management of our water resources is inextricably inter-linked with that of our land and biotic resources and cannot be attempted in isolation, we must not lose any more time in creating the institutional arrangements which would make it possible for a synoptic and integrated view being taken of their various requirements And unless such a view is taken, it would not be possible to deploy our limited financial resources in a meaningful and rational manner and avoid lop-sided and unproductive investments, even as our precious natural resources continue to suffer increasing depletion and degradation.

19. In this view of the matter, there is a clear case for transforming the Central Ministry of Water Resources into a Ministry of Natural Resources which would place under one administrative umbrella all the various disciplines, agencies and programmes related to water, land and forest management. This would involve the transfer to the proposed Ministry, of the existing Department of Forests in its entirety as well as subjects like soil and water conservation, watershed management and soil surveys which at present fall under the purview of the Ministry of Agriculture and Cooperation. It would also require the transfer from the Ministry of Rural Development to the proposed Ministry of the numerous schemes and programmes—whether for area development or poverty alleviation or employment generation—which aim essentially at the improvement of the resource base of the rural sector, and contain significant provisions for investment in afforestation and soil and water conservation

20. Such a basic administrative reform—which will set the pace for similar changes at the State and District levels—will naturally take time as well as a great deal of political will to carry out, for it is bound to encounter determined opposition from various vested interests which have got accustomed, over the decades, to working in splendid and unquestioned isolation. But there is really no way that it can be put off much longer. In the meanwhile, it would be desirable to give serious thought to the manner in which the proposed Ministry should be structured Keeping in mind the over-all situation of our land, water and forest resources, it would seem appropriate to divide its work into five departments, in the inte-

rests of clarity of objectives, balanced growth and productive investments in the entire field of natural resource management.

Firstly, a Department of Surface Irrigation which would be responsible not only for the big surface schemes which serve around 20 mh (net) but also for the smaller projects which irrigate another 7 mh (net) of agricultural lands. This Department would be expected—before it attempts to create any fresh potential—to achieve fuller utilisation of the potential which has been already created, to bring big projects out of the red, and to pay greather attention to drainage and the menace of water-logging. It would also of course be responsible for flood control (as distinguished from flood prevention) programmes.

Second, a Department of Ground Water. This would essentially be an upgraded and suitably strengthened version of the Central Ground Water Board and be responsible for accelerated ground water studies, for the introduction of improved technologies in pumping, for tendering timely advice to States regarding the imposition of ground water controls, and for suggesting measures for increased recharge by natural as well as artificial means—so that ground water tables are prevented from falling in the 20 odd mh (net) which are dependent on this resource, even as new areas are brought under ground water irrigation.

Third, the Department of Forests. This department should be expected not so much to engage itself in the creation of new plantations on denunded forest lands as to concentrate on conserving what is left of our 30 odd mh of natural forest and to strengthen the forestry research base. It needs to be borne in mind in this connection that the depletion of our existing forests is proceeding apace ever as efforts are being made to plant new ones, and that the creation of fresh tree cover is best done through voluntary effort and natural regeneration, rather than through forestry bureaucracies. In fact these bureaucracies have no experience of creating man-made forests on a large scale, and cannot undertake plantations at less than around Rs. 6000 per hectare—a cost the country can simply not afford.

Fourth, a Department of Urban and Suburban lands, charged with the responsibility of ensuring that future urban expansion takes place in a manner which is highly economical in the use of land, particularly in the use of good agricultural land. This is a matter which has received little or no attention uptil now but is of the very highest importance considering that urban growth is taking place at a very significant rate, that there is little or no scope for increasing the area under agriculture, and that our population—a significant part of which is below the poverty line—is expected to reach the billion mark by the year 2000 and double to around 1500 million before it attains a zero growth rate towards the middle of the next century.

Fifth, a Department of Soil and Water Conservation which will be charged with the responsibility of ensuring that the country's run-off and soil losses are reduced to the minimum and that the incidence as well as severity of both droughts and floods is controlled to the maximum possible extent. This department will have to pay special attention to the natural regeneration or permanent vegetation on non-agricultural lands and to the conservation of moisture as wall as top soil on rainfed agricultural lands. It may also be made responsible for soil and land use surveys as well as programmes for monitoring the health of the soil in multi-cropped lands which receive heavy applications of inorganic fertilisers and pesticides—a matter which has received very little attention so far.

21 One of the foremost tasks of the new Ministry would be to consider how the total financial resources which are placed at its disposal—by pooling together all the relevant allocations which figure today under dozens of fragmentary programmes in three different ministries—should be redeployed among the various interests represented by its 5 constituent departments. Such an exercise will undoubtedly result, among other things, in a substantial diversion of funds from big irrigation projects to the tasks of soil and water conservation and thus correct an imbalance which has cast the country dearly.

Bring in administrative reforms

22. It would, however, be a mistake to imagine that the stupendous challenges which we face in this field can be met purely through administrative reforms and governmental action—even if we had all the money in the world, which of course we don't. While State action is certainly necessary wherever narrow specialisations and high technologies are involved—as for instance for the building of large dams and major canal and drainage systems, the carrying out of ground-water investigations, the organisation of forestry research or the planning of urban land use—it is certainly not needed, and can even be counter-productive, in the many areas which the people can help themselves, provided they are given some basic technical advice and guidance. Indeed, if the gigantic tasks which have been outlined above are to be accomplished within the constraints of available resources and at the speed which the situation demands—for we must win the race against time to avoid certain disaster—there is no alternative but to mobilise idle man-power in the rural sector and to convert surpuls labour into permanent physical assets, a la Mao's China.

23. These physical assets will take the form of reshaped lands, field channels and drains in commands areas, contour terraced fields and bunds, millions of small storages—ideally, one for every single micro-shed—in all our rainfed agricultural areas and denunded non-agricultural lands and billions of trees planted

on every bit of vacant land which is ont needed for any more useful purpose. All these are works of a nature that, given a modicum of technical guidance, they can be carried out by the people themselves without bringing in expensive contractors and paid labour.

and motivate people

24. However, and this the crux of the matter, such assets can come into existence only if the people can be motivated to give freely of their surplus time and labour for works which they perceive to be for their common good and the benefits of which they are confident of sharing with other members of the community in a fair and equitable manner. Such conditions however, are conspicuous by their absence in almost all parts of the country today. Our village communities are by and large feudal and fragmented, not egalitarian and homogeneous. in structure; they are often dominated by muscle men and mafias and have become distrustful of authority on the one hand and, on the other, incapable of taking joint initiatives for their own betterment. Also, of course, they enjoy little or no autonomy. have access to no financial resources worth speaking of, and have no viable institutions for democratic self-government.

25. Incidently, it is only if we learn to work with and vibrant, self-reliant communities brought into existence so that they may tackle their own immediate problems of resource management with confidence and vigour. This is an enormous task, which calls for major political, administrative, and social changes in the rural sector but it is a task which must be carried cut if we are to survive as a self-respecting nation.

26 Incidently, it is only if we learn to work with and through the people that it will be possible to solve one of the most intractible problems in the entire field of resource management—the problem of unrestricted grazing by over 400 million heads of livestock on around 123 mh of non-agricultural lands, only about 30 mh of which are left with good vegetal cover. It needs to be appreciated that it is the unbearable pressure that these animals exert on the land that is responsible for the thorough-going destruction of young trees and grasses before they get a chance to establish themselves. It is this destruction—which takes place through grazing and browsing as well as by the trampling under foot of young vegetation—which prevents natural regeneration from taking place. A great deal of damage to young as well as mature trees also takes places as a result of the devastating forests fires deliberately caused by graziers and shepherds who wish to feed their animals on grasses which sprout only if the undergrowth and leaf litter in forests is first destroyed.

The green cover, a must

27. Experiments in all parts of the country have shown that, thanks to the seeds carried by air and bird dropping, natural vegetation reasserts itself very quickly even in the most inhospitable conditions provided that denuded lands are left severely alone and protected from biotic interference by man and animal. Experiments have also shown that once natural grasses reappear, and if only hard cutting is resorted to a protected pasture can support 4 to 6 times the number of animals and at a higher level of nutrition —than if it was kept open to unrestricted grazing. The closing of denuded lands to grazing therefore offers the quickest and the most inexpensive way to the restoration of natural tree and grass cover, and to the prevention of excessive run-off and soil losses, as well as to the rehabilitation of a beleaguered animal husbandary industry. For all these reasons, it must form perhaps the most important part of any programme for large scale afforestation and soil and water conservation. However, villagers will agree to stallfeed their animals only if they are educated into the evils of unrestricted grazing and the benefits of closures. They must also be assured that the benefits of changed land use will flow in a fair manner to all and will not be appropriated—as is often the case—by the rich and the powerful

28. These are formidable tasks indeed but we must take heart from the fact that there are a few villages (such as Ralegaon Shindi in Maharashtra and Sukho Majri in Haryana) which have already transformed their environment and economics by putting an end to free grazing, by harnessing the forces of natural regeneration to re-clothe their waste lands, by carrying out soil and water conservation measures which reduced run-off and soil losses to the minimum and by revitalising their agriculture, animal husbandry, horticulture and tree farming industries on the basis on an equitable sharing of the benefits accruing from improved resource management. We must learn from such examples and find out how they can be replicated on a nation-wide scale.

29. We must also take note of the fact that hundreds of experiments conducted during the last 25 years by Soil and Water Conservation Research Centres of the ICAR in various parts of the country show how dramatically run-off losses, soil losses and peak flows can be reduced—the former two sometimes by a factor of 100 per cent—by the restoration of vegetal cover on non-agricultural lands and by soil and water conservation measures on agricultural lands, if carried out with meticulous care in the micro catchments—sometimes of only a few hectares each—which form the basic geographical units for resource management.

30. We stand today on the very brink of ecological, demographic, and economic disaster. The situation demands that we should learn to look at the total resource management scene in a coherent and holistic manner, take energetic steps to correct past mistakes and chart of bold new course of action for the

(Continued on page 34)

Soft coke as domestic fuel

Dr. D. N. Singh

Soft coke could be an important source of inter-fuel substitution for firewood kerosene and gas provided prices are subsidised and proper production and marketing facilities provided. The author here says that the Government should take some promotional as well as legislative measures to ensure compulsory consumption to a certain extent by families, big hotels and restaurants so that the hurdles in its use as fuel are removed.

THE USE OF SOFT COKE as a fuel assumes its importance as an important source of inter-fuel substitution for kerosene and firewood. It is produced from coals which have some coking properties which are not necessarily metallurgical coals. These coals are available mainly in Eastern Coalfields Ltd. (ECL), Bharat Coking Coal Ltd. (BCCL) and Central Coalfields Ltd. (CCL). The BCCL and CCL use mainly the coals which are declared as coking but non-linked to washeries. ECL uses of coals, with some coking properties but not graded as coking coal.

Though there is no commercial grading, domestic coke has been classified by I.S.I. as follows :—

Characteristics	Class I	Class II	Class III
1. Moisture percent by mass (maximum)	8	8	8
2. Volatile Material (Percentage)	3-10	3-10	3-10
3. Ash %	30	40	50

The range of the product should be between 10 and 100 millimetres (mm) and not more than 10 per cent by mass shall either pass 10 millimetre I.S. sieve or be retained on 100 millimetre sieve.

For the purpose of pricing and royalty, cess, etc., an overall conversion factor of 1.35 tonnes of raw coal, per tonne of soft coke is considered.

Production

The production of soft coke in Coal India Ltd. is given in Table I. Table II indicates the despatches of soft coke while Table III indicates stocks. Table IV brings out the consumer prices fetch by working class at different centres. A perusal of Table I indicates that the production of soft coke has declined year after year intermittently during the last couple of years. Parallel with the decline of production, there has been a decline in the despatch also which is evident from Table II. Transportation cost is perhaps the main dis-incentives in soft coke popularisation which is evident by the fact that rail transport has declined leaving place to road transport. Despatches of soft coke by means other than rail from various States is indicated below :

(million tonnes)

	1974-75	1979-80	1980-81	1981-82	1982-83	1983-84
	1.644	1 54	1 620	1 446	1 220	1 067
% of total despatch	58.5%	66 7%	69 8%	68 8%	70.6%	69.8%

The main reasons for slack in the use of soft coke have been the :

(i) Lack of culture to use this as a fuel with confidence in rural areas in comparison

to the other items like wood and cow dung which are cheaper, convenient to use and whose availability is assured.

(ii) A convenient and sophisticated use of kerosene and gas in the urban areas promoted their use and the coke whose use might cast a stigma in the social status perhaps did not promote its use.

(iii) Fluctuation in the availability in the consumption centres being away from the production centres perhaps also affected the use. In addition, the price of raw coal needed for soft coke production and cost of production taken together mitigates the incentive of the coal industry to produce more soft coke for sale at lower prices.

According to the studies conducted by Department of Coal|Coal India Ltd., soft coke is barely competitive with kerosene even in urban areas as Patna and Calcutta which are located in the vicinity of the coalfields. The impact of freight of soft coke and the subsidy on kerosene is obvious in this regard.

Price stabilisation, a must

Royalty and cess are charged on the raw coal used for soft coke making at rates which are applicable for coking coal. The ex-mine price of soft coke is higher in BCCL|CCL than in ECL. The average manufacturing cost is about Rs. 40 per tonne of coke and the process is entirely manual with wage component of cost at about 90 per cent As such the manufacturing cost will be highly sensitive to wage increases. Thus, the effect of the subsidy given by the Government is partly eroded by the royalty and cess attracted by coal mainly from the State Government. While the royalty and cess add to the cost of consumer, the freight element due to increasing share of road transport, is today pricing out soft coke, in comparison with the kerosene and all forms of non-commercial fuels. Unless these are arrested, popularisation of soft coke as domestic fuel would be very difficult. Besides the above, the present day manufacturing of soft coke largely consists of igniting a stack of raw coal and quenching the burning stack at an "appropriate" stage, before all the volatiles are driven off (about 8 to 12 per cent is intended to be retained to enable easy ignition of the soft coke and some flame). Thus, it is entirely the human judgement to ensure quality and in addition stone|shale content in the raw coal may find place in the soft coke. Besides, the open and uncontrolled burning causes atmospheric hazards. With the view to improve the situation, a mechanised pilot plant was designed and constructed in ECL, Mugma area, which was commissioned in 1980-81. The results were found encouraging and a new plant with 1 million tonne capacity has been proposed for installation in Mandman mine. Thus mechanised plants should therefore be encouraged.

A medium temperature carbonisation plant is being put up at Dankuni to produce soft coke, town gas and several bye-products.

Divorced from the concept of a net return from cost benefit analysis, it would be desirable to increase the subsidy on soft coke and the supply of good quality coke at a reasonable price be made available to the people so as to induce people back from the use of kerosene, oil to soft coke. Accordingly, higher priority of soft coke movement by rail should be given. Apart from subsidy and the priority in rail movement, Government should take some promotional as well as legislative measures, as concrete steps for the greater use of soft coke, towards the inter-fuel substitution in order to check the consumption of kerosene|gas and protection of wood|trees. While the promotional attitude would entertain subsidy, reward to the best seller of the soft coke, manufacture of coke ovens at lower prices etc., the legislative measures would warrant punitive measures for forest destruction. Besides a family may use 25 per cent of their fuel consumption as a soft coke which should be issued compulsory from retail ration shop from where other items are made available. Further big hotels and restaurants should be forced to use soft coke upto 75 per cent of their fuel requirements. Apart from the above, marketing agency of the coal company should be geared up to take up the challenge and to take various measures in promoting markets for the use of soft coke. A consciousness should be evoked in the society towards energy conservation and optimal utilisation by various medias. R&D efforts should be accelerated for more areas in the industry as well as in the the house centres which could find pace for soft coke uses.

Table I

Production of Soft Coke in Coal India Limited

(million tonnes)

Company	1974-75	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
1	2	3	4	5	6	7	8
ECL	1.13	1.08	1.011	10.097	0.707	0.594	0.727
BCCL	1.18	0.92	0.828	0.851	0.715	0.550	0.482
CCL	0.49	0.41	0.423	0 342	0.315	0 312	0 389
WCL	.	0.01	.		.		
TOTAL	2 80	2.42	2 262	2 290	1 737	1 456	1.598

Table II

Despatches of Soft Coke

(million tonnes)

Company	1974-75	1979-80	1980 81	1981-82	1982-83	1983-84	1984-85
1	2	3	4	5	6	7	8
ECL	1 122	1 064	1.037	1 009	0 702	0 620	0 708
BCCL	1 199	0.879	0.862	0.776	0 712	0 589	0 483
CCL	0 486	0 359	0.419	0.316	0 314	0 318	0.345
WCL		0 005	..				
TOTAL	2 807	2.307	2.213	2 101	1 728	1 5_7	1 536

Table III

Stocks of Soft Coke

(million tonnes)

Company	March '75	March '80	March '81	March '82	March '83	March '84	March '85
1	2	3	4	5	6	7	8
ECL	0.013	0.039	0.002	0 095	0 207	0 044	0.042
BCCL	0 077	0 159	0 124	0 201	0 087	0 031	0 042
CCL	0 019	0 082	0 044	0 049	0 033	0 007	0 023
TOTAL	0 109	0 280	0 170	0.345	0.327	0 082	0 107

Table IV

A. Consumer Prices for Soft Coke (40 Kg.) paid by Working Class at selected Centres

(Price for 40 Kgs. in Rupees)

Centre	March 1982	March 1983	March 1984
1	2	3	4
Calcutta	14 20	21.20	26.00
Delhi	18.11	20.80	22.34
Raniganj	1.72	1.72	1.72
Asansol	14.20	17 20	23.60
Bhopal	24 30	30.20	32.00
Jharia	1 08	1.08	1.08
Nagpur	23 12	24.00	31 95
Kanpur	30.42	35.33	40.27

B. Administered Price of Soft Coke (Rs. per tonne)

w.e.f. 14-2-1981	w.e.f. 27-5-82	w.e.f. 8-1-84		w.e.f. 9-1-86
150.00	175.00	175.00	For industries	300.00
			For domestic consumption	175.00

Better security of national parks

The Central Government has taken up a survey of the management of all national parks and wildlife sanctuaries in the country to ensure their security. The country at present has 58 national parks and 254 wildlife sanctuaries.

The regional representatives of the Indian Board for Wildlife and other Government of India officials are deputed on perioaic visits to certain national parks and sanctuaries to report on the matter.

With a view to giving incentive for better management, the Indian Board for Wildlife Award is given by the Central Government periodically for the best management. □

Fast modernisation through computers

G. P. Dodeja

Computers, says the author, are not mere electronic instruments but are 'Think-tanks' capable of performing reasonable and logical human activities much faster than one could even imagine. Increased productivity, quality and reliability have ensured its entry into various fields such as banking, industry, transport, defence, communication, etc. The potential impact of computer on manufacturing process, according to the author, is leading to a new Industrial Revolution.

THE COMMON BELIEF, that a computer is merely an electronic instrument which carries out instructions given by men or it can calculate faster than men but can do nothing qualitatively different than any trained person, does not hold good. Today a computer can THINK also. It can perform qualitative logical operations which sometimes are beyond the capability of human beigs.

A modern computer operates at much faster speed and performs all logical operations based on input informations. The reliability of computer has reached such a high limit that a small mistake made by the programmer is not accepted by the computer and accordingly an error signal is given which makes the programmer to review his programme.

Application

Some applications of electronic computers which themselves speak of their Quality and Reliability are :

Compute the behaviour of Nuclear Reactor ; Predict the performance of an aircraft or missile still on the drawing board ; Control the flight of rockets and guided missiles ; Predict weather ; Predict economic conditions and election results; Control unmanned factory automatically ; Determine which products can be manufactured more profitably through LP (liner programme) package ; and Seat reservations in Airline, Railways, etc.

So much so, it is evident that computer applications encompass the entire range of reasonable and logical human activities. The human activity has to be logical and free from human emotion and value judgement—such as the comparative beauty of a painting or the moral value of an action.

Economic and weather forecastings though seem simple involve such massive and rapidly changing datas that even batteries of highly trained statisticians will not be able to carry on the task successfully in the brief available time.

Automation

As a practising manager in industry, I have keenly followed the growth and development of electronics and computer-based technology because they lead to semi-Automation|Automation. The development of computer is affecting every sector of the nation's economy.

Today there is an increased level of Automation in Banking, Insurance, Transport, Communication, Defence, Industry, etc. In industry the level of automation depends upon the advancement in computer-based technology. The basic philosophy of automation in industry is to perform an operation independent of operator's skill and in turn improve the quality and reliability of product.

Quality and reliability

The main problem being faced by the industries is the quality and reliability of a finished product. If the finished product is based on the skill of the operator, then the consistency of the quality cannot be ensured because the skill of the operator does not remain same throughout the 8-hour working due to the element of FATIGUE and hence the introduction of computer-based technology.

Today, Japan is the only country which has adopted different levels of Automation including the Automated Factory; thereby leading to much higher growth of productivity. The level of automation in the field of manufacturing technology can be briefed as :

CAM Operated Automat, Automatic Transfer lines (spm), CNC M|Cs (Computer Numerical Control machines), DNC System (Direct Numerical Control), and FMS with Robotics (FMS—Flexible Manufacturing System).

Now computers are becoming increasingly relevant to the design and manufacturing of product. Design principles are embodied in software through CAD (Computer Aid Design) ; circuit diagram and other layout can be automatically drafted through CAD and manufacturing task like machining, welding, assembling, inspection etc. can be controlled through CAM (Computer Aided Manufacturing).

Various tasks like Computer Aid Research, the automatic generation of diagram and documentation, Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) are grouped under a broad heading CAE (Computer Aided Engineering). In short, the CAD and CAM are the two basic arms of CAE and when they are integrated, it is termed as CIM (Computer Integrated Manufacturing)

New industrial revolution

The potential impact of computer on the manufacturing process is leading to a New Industrial Revolution. Today, the factory floor can be linked to Engineering information by the integration of CAD|CAM system. This, in turn, will help to monitor Group technology, Process planning, Production planning and control, MRP, Inventory control, Robotics etc. In short, CAD|CAM will break the wall between engineering and manufacturing and in turn will lead to an integrated system where narrow interest barriers will be eliminated.

BHEL—Bhopal has been upgrading its manufacturing technology from time to time depending upon the trend of Automation. Bhopal unit has the blend of Conventional machines, Automats and latest CNC machines. Today Bhopal Unit of BHEL has 20 CNC machines of different natures like machining centres, lathes, multispindle drilling m|cs, turret punching m|cs, wire cut EDM m|cs etc.

Due to the introduction of CNC technology in Bhopal Unit, the productivity and quality of complex components have improved considerably which in turn has brought down the rate of rejection| rework. Now Productivity gains in metal cutting and metal forming areas vary from 2.5 : 1 to 8 : 1 in metal cutting field and 4 : 1 to 12 : 1 in metal forming area. BHEL is now planning for the introduction of integrated CAD|CA system and Robot too.

It is, thus, evident now that high level of automation has been possible only due to high reliability of Electronic Computers.

□ □ □ □

(continued from page 15.)

and Rural Development at the Centre, the multiplicity of programmes and authorities at the grass-roots level does cause problems. One can perhaps suggest integration of the various programmes under single authorities at the Centre and the states to the extent feasible.

Mr. Dhillon mentioned about this in his speech at the conference. He said that down the line at the field level, one observed that there was a lack of co-ordination resulting in dilution of the impact of the total rural development strategy. The integration of the programmes like IRDP, NREP, RLEGP, DPAP, DDP and Rural Water Supply of this department with the various programmes of agriculture and action under special relief programmes is not taking place in a concerted manner to enable the maximum output to emerge.

One would like to conclude by quoting Gandhiji who had said : "My notion of democracy is that under it, the weakest should have the same opportunity as the strongest." □

Appiko movement for saving forests

Paudurang Hegde

Like the famous Chipko (hug the tree) movement of the Western Himalayas, the Appiko movement has made a notable contribution to saving the forests of Western Ghats in the country. Given here is an account of the Appiko movement that has been written by one of its leading activists.

THE FAMOUS CHIPKO ANDOLAN (hug the ·es movement) of Uttarakhand in Himalayas ·pired the villagers in Uttara Kannada district of ·rnataka to launch a similar movement to save ·eir forests. In September 1983 villagers from ·lkani, led by men, women and children 'hugged the ·es' in Kalase forest The local term for 'hugging' Kannada is 'Appiko' Appiko Andolan gave birth a new awareness all over South India. The move·nt reached the hearts of people as it was launched many parts of Karnataka.

Why this movement ?

There are valid reasons behind launching of ·ppiko in Uttara Kannada district This district ·d forest cover extending over 81 per cent of its ·ographical area in 1950-51 The government ·clared this forest district as 'backward' area and ·tiated the process of 'development' Three major ·dustries were started in this area—a pulp and paper ·ll, a plywood factory and Power in the form of chain of hydel dams constructed to harness the rivers of this region. These industries over exploit the forest resource and the hydel dam submerged huge forest, and agricultural area. The forest area in 1980-81 decreased to nearly 25 per cent. The local population, especially poorest groups, were uprooted for dam construction The drastic change in forest cover affected agricultural economy of the area. The conversion of natural mixed forests into teak and eucalyptus plantations resulted in drying of water resources affecting forest dwellers In a nutshell, the three major P.s.—paper, plywood and power projects meant for development of people have eventually resulted in a fourth 'P'—that is poverty. Thus the force which drove people to poverty is mainly the depletion of forest resources in Uttara Kannada. Appiko Movement is the people's reaction and response to anti-development process thrust upon them.

Mass deforestation

The Sahyadri range or Western Ghats in South India has its district entity as it is the home of tropical forest ecosystem This tropical forest constitutes a potentially renewable resource but it is also one of the most fragile ecosystems which calls for special attention. In the past thirty years the onslaught of 'development' activities and an increase in population has depleted this fragile resource system to sheer exhaustion. To take the case of Kerala, which comprises 42 per cent of entire Western Ghat area, the forest cover came down from 44 per cent in 1905 to a meagre 9 per cent in 1984. The result of such deforestation in Western Ghats has caused severe problems for whole of South Indian States The recurring drought in Karnataka, Maha-

rashtra, Kerala and Tamil Nadu is a clear indication of watershed degration. The power generation, water supply and ultimately the whole economy of South India is adversely affected. The drought in Karnataka for fifth successive year indicates the extent of damage caused by change in the fragile ecosystem of Sahyadri. The on going 'development' policy of exploiting the resources in Western Ghats, mainly forest and mineral resource, for the benefit of elite in society has deprived poor people of their self supporting systems.

Saving tropial forests

Appiko movement is attempting to save this Western Ghats by spreading its root all over South India. Broadly speaking, the objectives of the movement can be classified into three major areas. First Appiko is struggling to save the remaining tropical forests in Western Ghats, Secondly a modest attempt is made to restore the greenary in denuded areas. And lastly, the third area is to propagate the idea of rational utilisation to reduce the pressure on forest resource. To sum up all these three objectives ; To save, to grow the rational use, which is popularly known in Kannada as 'Ubsu' (Save, 'Belesu' (grow), 'Balasu (rational use). This is the popular slogan at Appiko Andolan.

As said earlier, the deforestation in Western Ghats has already effected hydel dams, reservoirs and agroculture. The Planning Commission has recognised the high depletition of natural resources in Western Ghat in Seventh Plan document. The need of the hour is to save the remaining, tropical forests of Western Ghats. This is the first area of priority for Appiko Movement. The area is so sensitive that the removal of the cover in Ghats leads to laterisation process, converting the land into rocky mountains Thus a renewable resource is turned to non-renewable resource Once laterisation process sets in, then it takes centuries to grow trees in that land. So, before we reach such extreme point, Appiko arms at saving the, remaining forests in Western Ghats This is achived through organising decentralised groups at grass roots level to take direct action.

How it's carried on

In this process Appiko uses various techniques to raise awareness among common people. Foot march in interior forest village, glide shows, using folk dance-drama, street play etc. are the mode of communication to spread the message.

In last three years Appiko has achieved a fair amount of success as the state government has banned felling of green trees in some forest areas. Only dead, dying and dry trees are felled to meet local requirements. Appiko has spread to four hill districts of Karnataka. There is potential of the movement spreading to save Eastern Ghats in Tamil Nadu and also spreading to Goa in future.

Afforestation

The second area of Appiko's work is concerned with afforestation work on denuded land. In the previous years the activists have successfully motivated villagers to grow saplings. Individual families as well as village youth clubs have taken active interest in growing de-centralised nurseries.

An all time record of 12 lakh saplings were grown by people in Sirsi area in 1984-85. No doubt, it was possible because of the co-operation of forest department who supplied plastic bags to grow saplings. In this process of developing de-centralised nursery the activists came to know that forest department makes extra money in raising nursery. The cost paid for one saplings, grown by villager was 20 paise whereas the cost of a single saplings raised by forest department amounted to a minimum of—Rs. 2.00. In addition to this, the forest department resorted to spraying fertilizers and tablets were given to saplings. The Appiko experience has brought overuse of chemical fertilizers in raising forest nursery, making it a capital intensive, money making programme. The nursery programme of village people propagated by forest department is really a means to utilise village labour at cheap rate. Appiko activists have learnt lessons from this experience and they are now growing saplings only to meet their needs not to give to forest department.

Making barren land smile

The villagers have initiated a process of regeneration in barren common land. The Young Club has taken the responsibility and the whole village has joined hands in protecting this land from grazing, lopping and fire. The experience shows that in those areas where soil is present, the natural regeneration is the most efficient and cheapest way of bringing barren area under tree cover. In the areas where top soil is washed off, tree planting, especially indigenous fast growing species is done The irony is that Forest Department is resorting to mechanised planting of exotic species like alacca and causurina The department also uses huge amount of fertilizers on these exotic mono culture plantations. This activity is definitely going to harm the soil, and eventually the tree cover in the area. There are two obvious techniques of greening, one-capital intensive method of Forest department and the other-peoples technique of growing through regeneration a natural process for sustainable development of soil.

Use of eco-sphere

The third major area of activity of Appiko Movement is related to rational use of eco-sphere. This

(Continued on page 34)

Why can't we lower population spiral ?

Dr. A.D. Sharma

Why have we not been able to being down the rate of population growth? What exactly is lacking in our family planning efforts? The author feels that we have not made any efforts to graple with factors that influence the fertility level. He points out that "in fact the policy makers have taken a very limited view of population planning, often equating it with providing facilities for contraceptive devices and thus extremely meagre achievements have been the results. It is high time that we stopped putting the cart before the horse if we want to achieve speed towards curbing population explosion."

STARTING FROM THE UTTERLY basic pre- se, the main burden of family planning programme India has been and still is to find a course of steps equate to substantially reduce the fertility level. But results show that the programme, as conceived d followed by us, has not matched the envisaged gets. In fact the statistics from the sources of the gistrar General of India clearly prove that our hievements have been, at best, negligible.

The bitter conclusion we have arrived at is sup- rted by cold facts coming out of the conscience oks of the Registrar General. The statistics quoted re for the period from the beginning of the present century (1901) about the decade-wise movement of fertility level, have revealing stories to tell. It should put us on the alert and make us think as to where have we gone wrong and also if we have to change our strategy and how. Let us have a look on the data.

	DECADE	BIRTH RATE (PER YEAR PER THOUSAND)	
4 0	1901 — 11	49 2	1.1
8 2	1911 — 21	48.1	1 1
	1921 — 31	46.4	1 7
	1931 — 41	45.2	1.2
8 2	1941 — 51	39 9	5.3
2 8	1951 — 61	41 7	1.8
	1961 — 71	41 2	0 5
	1971 — 81	37 1	4.1

Lowering fertility rate

A damaging conclusion, emerging from these figures, is that on the fertility level of 1941-51 we have been able to achieve a decrease of only 2.8 percentage points upto 1971-81 decade while in an equal period from 1901-11 to 1931-41 the decrease in fertility level had been of the tune of 4.0 percentage points It shows that in spite of our best efforts and colossal expenditure our gains in 30 years could not even match the gains of 30 years in the beginning of the century, when, there was no family planning programme at all at Government level.

The trend from 1901 shows a continuous decline in birth rates. The figures for the second, third and fourth decades of the century show a fall of 1.1, 1.7 and 1.2 percentage points on the figures for the res-

pective preceding decades. The figures for the fifth decade, 1941—51, show an abnormally high fall in fertility level but this presumably is because of the fact of the world war second. The sixth decade, 1951—61, has a high fertility level than the preceding decade and then from 1961 the fertility phenomenon catches up the old trend and shows a fall of 0.5 percentage points for the decade, 1961—71. The last the eighth, decade has more encouraging decline in fertility, it being of 4.1 percentage points for the decade 1971—81.

The figures thus show that three decades, beginning with our planned development experiment, i.e., 1951—61, 1961—71 and 1971—81, do not have any encouraging story to tell. The decline in fertility in 1951—61 and 1961—71 was assessed to be of a —1 8 and + 0 5 percentage points Compared to the rate of decline in the beginning of the century this rate offers only discouraging signs and does not bear the stamp of a success of the compaign we have been mounting since 1952 (the family planning programme began in 1952 and not in 1951)

The decline was of —1.8 and +0.5 in 1951—61 and 1961—71 as compared to that of 1.1, 1.7, 1 2, and 5.1 for the preplanning period decades. No one can commend a decline of a mere 2.8 percentage points from 1941—51 to 1971—81 while there was a decline of 4.0 percentage points from 1901—11 to 1931—41, the same being of 9 3 from 1901—11 to 1941—51

No results!

From the data available it can be inferred beyond doubt that the colossal effort in terms of money and energy put into the programme of family planning has shown no results in bringing down the level of fertility during the period, 1951—81 Ironically the decline in birth rates was noticed to be of a much greater order during 1911 to 1941 (when there was no formal FP programme) than during 1951 to 1981 (When we have been crying hoarse about FP)

Thus the statistics, resting with the Government of India, do not, in fact, commend the family planning programme that the country has been depending upon since 1951 in terms of quickening the pace of the decline in birth rates.

We have also to remember at the same time that by the end of sixth, five year plan we had spent about two thousand four hundred crores of rupees on family planning and in the seventh five-year plan our targetted expenditure would be well over three thousand crores, blatantly much more than what we have spent in the whole planned period from 1951 to 1985 The break up of the outlay|expenditure has been summarised in the following table ·

Outlay|Expenditure on family welfare programme during planned period.

PLAN	OUTLAY/ EXPENDITURE (IN CRORES OF Rs.)
First Five Year Plan	0.14
Second Five Year Plan	2 15
Third Five Year Plan	24.86
Three Annual Plans	70 46
Fourth Five Year Plan	284.43
Fifth Plan	408 98
Sixth Plan	226 05
Sixth Plan (1980—85)	1 391.4
Seventh Plan (1985—90)	3256.0

The family planning programme has not achieved much but this should not surprise anyone If we go deep into the casualty of these discouraging facts the reasons of our failure are not difficult to see.

It's imaginative !

Though the family planning programme is aimed at expediting a decline in birth rates so as to arrest, the explosive growth of population; yet the programme cannot achieve that aim in its present form, the way it has been conceived, planned and implemented In fact we have totally ill-digested the problem and have been wrongly seeking a solution We have given very little importance to the circumstances which make a person decide in favour of a small family size and without having really spotted those factors which could impell the potential parent to take a desirable decision we have been shooting in the dark.

For achieving the objective of a lower fertility what we have been doing is to provide and improve the provision of birth-control clinics and have been depending on just that much. We have, perhaps, failed to realise that the contraceptive devices can mean something only when the potential parent has already decided to restrict the size of his family. We have not forcefully realized that what could be really effective was to first convince and prepare the potential parent to decide on a small famliy size We have been repeatedly emphasizing that the most basic and primary fertility determinats are, capacity to reproduce, Opportunity to reproduce, and, Decision-taking to reproduce Family planning clinics and Devices come only after these three have already had their effect and the potential parents have taken a decision to take to contraception For positive results we have to influence the three basics and primary fertility determinants and in that direction we have unfortunately done precious little We admit, we cannot possibly influence the capacity to reproduce significantly. We are then left with the opportunity, and decision-taking to

reproduce. The opportunity to reproduce could be reduced by increasing the age at marriage. For that purpose we have brought legislation increasing the permissible age at marriage, 18 years from 15 years for girls and 21 years from 18 years for boys. And yet putting this legislation into the statute books has hardly affected the people's behaviour in a desirable manner. The marriages are taking place at much lower age than warranted. Formal legislation does not have much meaning in such matters in a traditional society like ours. The formal figures, authenticity of which itself may be questionable do not show very appreciable increase in actual marriage-age. The other factor, decision—taking to reproduce, of which the importance is indeed paramount, has also not been taken care of significantly. The fertility figures not showing any very significant decilne, are themselves a conclusive evidence of decision taking to reproduce, not yet relenting.

Logic of money incentive !

The million dollor question that policy-framers and implementers have never (perhaps) addressed themselves to, is what really influences this decision taking. For them the simplistic (and yet a very questionable one) answer has been, give an incentive of Rs. 100 to a person and he will rush for relinquishing the 'God-given" and 'God-ordained' power of reproduction and rush to the Governments operation-room for vasectomisation or tubectomisation. What a judgement on public behaviour. And yet on such policy-markers sweat will have been thrown into gutters of indiscretion thousands of crores of rupees of precious money of this poor country. We have to remember and it has to precede everything else that the desirable decision-taking in favour of a small family-size would be done only by those, who are capable of rational thinking and who, besides being capable of thinking, consider a small family-size to be in their interest.

Need for good education

The capacity of thinking rationally can come through good education and, thus, to enable people to acquire that capacity we have to educate them properly and adequately. Thus, therefore, education should be considered an important missing factor of fertility level. Thus a top-priority has to be given to educating people if we want to reduce our birth rates.

Though education is most basic to our fertility reduction effort and yet an educated person will go for a small family size only when it fits in well with his scheme of life. This is the point which has escaped attention very often. In reality the fact of a person being educated will, by itself, not be enough to make a small family size desirable for him. Many other factors can be important in this context.

Need for analysis

We have to give due importance to the factors which make a small family size wanted and useful. Such factors would include a good and convincing social security system a high status of females in society, a high marriage age, a high rate of expenditure on children, a tertiary dominated occupational structure, high industrialization, a life full of mobilty, a non-existence of larger family links, and a high urban proportion in population.

Let us be clear that education and the above mentioned other factors, all, are important as far as the determination of a fertility level is concerned.

The analysis, above, clearly shows that numerous factors have to be taken care of if we want to influence the fertility level and if we have not influenced the relevant factors, the likelihood of a change in fertility level, is hardly any.

Reverting back to the Indian case it is so obvious from the statements of population policy that we have given a very little importance to these factors. We have not even considered them our responsibility, our concern, perhaps not even as part of our policy. The statements of Government of India on population policy make no reference to the factors which have a determining influence on fertility level. Why should we, thus, hope that the fertility level would experience a decline. When we are doing nothing to exercise such influence on the factors which determine fertility level.

The population policy statements of the Government of India have contained the targets of fertility level and when elaborated the policy has been envisaged as laying down the incentives etc in terms of money and other attractions (perhaps only paltry in magnitude) for the potential users of the FP devices. As many clinics, as many doctors and paramedical personal and the like are targetted. The policy has, as if, nothing to do with factors which could make the potential user, take a decision in favour of family planning.

It is quite clear that the family planning programme has not yielded results and it is also clear that the failure has been for the reason that we have made no efforts to graple with factors which influence the fertility level.

In fact the policy-makers have taken a very limited view of population planning, often equating it with providing facilities for contraceptive devices and extremely meagre achievements have thus been the results. It is high time that we stopped putting the cart before the horse if we want to achieve speed towards curbing population explosion.

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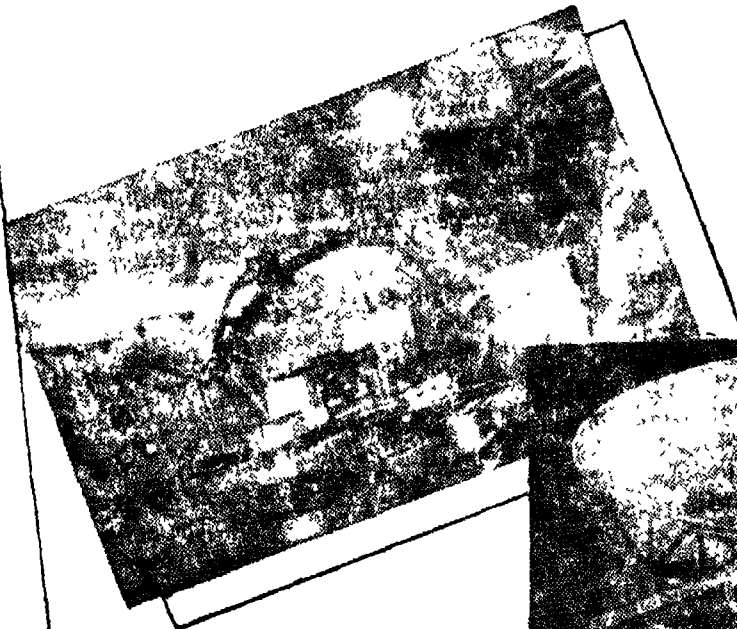
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Reserved for Readers

I am very thankful for reserving some columns for readers. I shall be thankful to you if you publish these lines on the 'Development of the Child' in your magazine 'Yojana'.

Much time will elapse before we come to realise that the "Child is the father of man". What the nation is today is the direct outcome of what its children were yesterday, and what it is going to be tomorrow will depend upon what they are like today. In order that a strong and virile nation may be formed, it is essential that the children possess a robust and dynamic personality which can be formed only by its fulfledged, all-round development it is highly regrettable that the concept of child-education has not gone much beyond the idea of providing him a knowledge of the 3Rs.

The idea of all-round development of the child's personality can be achieved by a proper comprehension of child-psychology, adoption of modern techniques of education and establishment and multiplication of nursery, and montessori type of schools all over the country. Institutions imparting instructions on these lines are few and far between and they are confined to certain big cities and towns The cost of education being very high there average citizens cannot think of admitting their children in them They are the exclusive preserves of the rich and wealthy people. No wonder the result is the stunted and morbid development of the personality of the average child.

The picture is all the more dismal when we see conditions in the countryside. Hardly will one come across a school of this type through the length and breadth of the villages. One is naturally shocked at the amazing disparity in treatment meted out to sons of the same soil. Let the authorities who swear by socialism, take steps to end these glaring inequalities and bridge this yawning gulf.

Balbir Singh Maan,
M.D U. Rohtak,
Haryana

Let me express my thanks to YOJANA fortnightly which has been doing a great service to readers by imparting relevant economic information. The article 'Power to our people, the only way" is really appreciable. It clearly highlights the fact that we are ignoring the golden pronounciations of our past leaders and the Father of our nation regarding our way of life and of power and people, where it centres and where it should be. A few words : usually YOJANA gives in the second page, last page, last but one page etc. certain information that prompts the readers to go deep into the fortnightly Certain targets and data achieved and to be achieved are really appreciable. The articles on public sector, MODVAT reforms, fiscal discipline and ecogrowth, social development and on similar other topics are very good and helpful to the students and readers of economics. It could be a boon for economic students if Yojana puts forward more and more relevant economic issues related to economic growth, monetary system, banking and financial management, fiscal administration, etc. The unsatisfactory and inefficient performance of public sector has been clearly revealed by Mohd. Talha in the article "Public undertakings, white elephants".

M V. Ravindran,
MA Student,
Cannanore

Communalism

We welcome your decision of introducing a column 'RESERVED FOR READERS' in the esteemed magazine YOJANA from November 1—15, 1986. Through this newly introduced column, I would like to express my views on communalism, which has posed a serious threat to national unity.

India is a multi-religious, multi-lingual and multi-ethnic country But right from the partition of the country, hundreds of communal riots have occurred and have caused incalculable loss in terms of life and property It has badly tarnished the image of India which is being recognised as an apostle of peace in the world.

If we go through the earlier riots, we will find the cause behind every riot is minor provocation by the political leaders, the religious leaders or a thoughtless act by the miscreants Even after 39 years of freedom, it is sad to note that no political party could dare nominate a non-muslim candidate in a muslim dominated constituency.

It goes without saying that these are the political and religious leaders who sowed the seeds of communalism in Indian society for selfish reasons What is more sorrowful is the formation of communal senas—Shiv Sena, Adam Sena, Bajrang Dal etc. Undoubtedly, these senas would fan the fire of communalism and thus make the problem more complex.

I would like to ask the Government how long the blood of the citizens would have to flow in the name of religion in this constitutionally secular state.

In the last I wish to convey a message through this column to the political leaders, religious leaders and fanatics that instead of playing the foul play of diplomacy they should cooperate in maintaining the peace and brotherhood among the citizens and making the country strong

Ramesh Kumar Srivastava,
Indira Nagar, Lucknow

Land reforms

As many as the first six of the Twenty-Point Programme 1986 to promote India's economy as a whole are directly concerned with the development of agriculture in particular and eradication of rural poverty in general. Considering the war on poverty as the first priority, India's policy-makers are now poised to create fuller employment for the uplift of rural economy and to remove social and economic disparities by way of ensuring distribution of gains among those who deserve. A modernised agricultural strategy apart, special employment programmes for rural labour and enforcement of land reforms emerge as the hall mark of the declared policy of rural transformation. The essence of such land reforms policy continues traditionally to consider implementing land ceiling and distributing surplus lands among rural poor. Mere political emotions, devoid of reality, still rule the scene of rural transformation through this distributist land reforms policy. But no policy issue so far is found to consider maintaining the flooring of land holding as a necessary pre-condition to ensure economically viable agricultural holding or, what we call, an efficient size unit of farm.

Dipak K. Biswas
Krishnagar, Nadia, W. Bengal

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(continued from page 28)

relates to introduction of alternative energy sources to reduce the pressure on forest. The activists have constructed 2000 fuel efficient Chulhas (hearths) in the area. This saves the fuelwood consumption by almost 40 per cent. The activists do not wait for government subsidy or assistance, there is spontaneous demand from common people. Even in Sizsi town and other urban areas, these chulhas are installed in hotels, reducing firewood consumption.

Role of gobar gas plants

The other way to reduce pressure on forest is through building gobar gas plants. An increasing number of people are building bio-gas plants. However, Appiko is more interested in those people who are from weaker sections, who cannot affored gas plants, so the emphasis is more on chulhas.

Some people, through wrong lopping practices damage the regeneration process in the forest area. Appiko is trying to change the attitude of people, so that they realise the mistake and stop wrong practies.

The thrust of Appiko Movement in carrying out above work reveals the constructive phase of people's movement. It is through this constructive phase that we can rebuild the depleted natural resources. In the process the sharing of resources in an egalitation way is inbuilt, helping the forest dwellers. The attempt is to establish a harmonius relationship with nature, to redefine development so that ecological movements today become a basis for sustainable permanent economy in future. □

(continued from page 13)

High and low growth

It is clear from Table (2) that during both the periods of 1962—65 to 1970—73 and 1969—72 to 1981—84, the North Western states of Haryana, Punjab and Uttar Pradesh achieved very high rates of growth in agriculture. Interestingly, next to these states, it is the central dry region comprising of Gujarat, Maharashtra, Rajasthan and Madhya Pradesh that has shown remarkable growth rate during 1969—72 to 1981—84 (the growth rate of this region was dismal during the earlier period). On the other hand, except for Andhra Pradesh, the performance of Southern states comprising Andhra Prades, Tamil Nadu, Karnataka and Kerala has been rather disappointing. It is the Eastern region comprising Assam, Bihar, West Bengal and Orissa that have had the most dismal performance in Indian agriculture. The data on the level and growth rate of foodgrains also brings out that it is the Eastern region that has lagged far behind the rest of the country because new technology of rice could not be widely adopted. That inter-region variations have become quite pronounced is also clear from the above fact.

Without any impact !

It, therefore, becomes clear that the Green Revolution has failed to make any appreciable difference in the overall rate of growth. The impact of high-yielding varieties have been mostly confined to wheat and rice and to certain states namely Punjab, Haryana, Western Uttar Pradesh and Andhra Pradesh. The remaining food crops do not figure at all. Even in areas|crops where it has led to remarkably high growth rate, the yield levels have been much less than the potentials. Even the impact of new technology has not been sufficient to alter significantly the trend rate of growth in crop production. As an important result of the slow growth in foodgrains production the per capita availability of foodgrain stands still. This is the consequence of the technological change which encouraged the production of two crops i.e., wheat and rice and the state policy which provided support price for them.

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(continued from page 21)

future. The battle for survival will be long and hard, and will be ultimately on only by appropriate physical action at the grass roots level. Village by village micro water-shed by micro water-shed, field by field, steps will have to be taken to enthuse local populations to participate in programmes to improve the productivity of all available land and water resources, so that the future of the present generation, as well as of generations yet unborn, may be secured. Will the leadership and the people of the country prove equal to this enormous challenge ? □

India makes technological advance in road and bridge construction

THE TOTAL PLAN OUTLAYS for roads and bridges in India is of the order of Rs. 14,000 million annually on construction and maintenance. The road network as per 1981—2001 plan is envisaged to be expanded to 2.7 million kilometres comprising national highways, state highways, major district roads and rural roads. Certain high density corridors are also proposed to be provided with expressways with completely access controlled design. Advancement in the field of technological development in the roads and bridges in India have been quite impressive. Roads have been built in high altitudes exceeding 3500 metres above Mean Sean Level traversing high mountains, deep valleys and snow-bound areas. A vast network of roads also penetrates into inhospitable arid regions where construction materials are not easily available. Mighty rivers like the Ganga and the Brahmaputra have been bridged at many places and bridges of lengths upto 5 kms. have been built. Congested urban areas have been provided with road fly-overs. Some of these long span bridges and urban structures have been built in record time by utilising proper technology and management techniques. Some important highway stretches have been taken up for provision of expressways which will be completely access controlled and will facilitate movement of motor vehicles without interference from slow-moving and cross traffic.

Experiments conducted in India under a World Bank Study have shown that substantial savings could be achieved by improving geometrics, providing paved surface and widening of the carriageway. It has been estimated that improvement of low grade sections, widening of pavement and strengthening the crust would bring in a saving of 20 per cent in the fuel consumption. Remote Sensing Techniques, tackling corrosion problems in bridges, use of Simulation Techniques for Road Planning are some of the areas which, when properly tackled, will usher in quality and upgraded technology in the highway engineering field. In this regard, the National institute for the Training of Highway Engineers which has been established under the Ministry of Transport is perhaps the only Institution of its kind to cater to the training needs of highway engineers in the region. ☐

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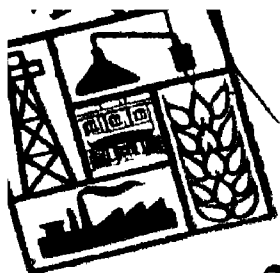
20-Point Programme 1986 to be implemented from the year 1987-88

THE MINISTRY FOR PROGRAMME IMPLEMENTATION is engaged in an exercise to work out the details of implementation and monitoring of the Twenty Point Programme 1986 in consultation with the respective Ministries and the Cabinet Secretariat. It is proposed to implement the programme with effect from the next financial year. This information was given by Shri A.B.A. Ghani Khan Choudhary, Minister for Programme Implementation to the Members of the Parliamentary Consultative Committee attached to his Ministry in New Delhi on October 28, 1986. He said the State Governments have also been addressed to initiate work on: (a) the schemes to be covered in the programme including the on-going schemes already under implementation; (b) quantitative and qualitative targets to be set for these schemes; (c) the funding arrangements ; and (d) the monitoring of the programme.

The Members were told that the Planning Commission has started discussions for the 1987 plan schemes. The State Governments have been asked to come up with their proposals with regard to the 20-Point Programme 1986. The funding and targets for these schemes will be finalised in consultation with the State Governments and the Planning Commission.

Shri Chaudhary stated that the Twenty Point Programme was the cutting edge of the plan for the poor. The programme had been restructured in the light of our achievements and experience and the objectives of the Seventh Plan. The restructured programme renewed four commitment to eradicating poverty, raising productivity, reducing income inequalities and removing social and economic disparities and improving the quality of life. The Minister said that the war on poverty is our first priority. In the past five years more than 10 crore of our poor had been raised above the poverty line. Our goal was to remove poverty and create fuller employment. □

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Small scale sector:
problems and prospects

NEXT ISSUE
January 26 Special

Development of rural economy in Seventh Plan

RURAL ECONOMY has been assigned a major role in the Government's strategy to combat unemployment during the Seventh Plan period. The central element in the development strategy is generation of productive employment. In the field of agriculture, this objective is proposed to be achieved through increase in cropping intensity made possible by increased availability of irrigation facilities and extension of new agricultural technologies to low productivity regions and to small farmers.

The Seventh Plan aims at extending the Green Revolution to low productivity areas through its emphasis on raising productivity of major crops in rain-fed and dry-land farming and of rice in the eastern region. These steps are expected to lead to faster growth in agricultural output in low productivity regions. The Plan also envisages continuation and expansion of anti-poverty programmes in the rural areas, like Integrated Rural Development Programme (IRDP), National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP).

The growth in employment potential in the Seventh Plan is in the agriculture sector, and within the sector, subsidiary activities other than crop production. The annual growth rate of employment potential in this sector is 3.5 per cent which is significantly higher than the growth rate of the rural labour force which is expected to be around 2 per cent. Thus the Seventh Plan, the Government hopes, would provide fuller employment in rural areas. ☐

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Wasteland regeneration, our priority

Usha Patel

In India where population explosion outpaces all production, wastelands regeneration is an immediate necessity. Any attempt in this direction, besides giving a fillip to production, is bound to increase employment opportunities in rural areas and also prevent floods, premature siltation, soil erosion, water logging, etc. which are the main curses of wastelands. Since a good portion of waste or wasted lands are under encroachments by villages, resistance to their regeneration is bound to occur. Hence the need for proper motivation and education of the villagers about the advantages of development of wastelands. Wasteland development in so far as India is concerned is a herculean task, which calls for concerted efforts by the National Wasteland Development Board and other concerned agencies with the cooperation of the people.

LAND, ONE OF OUR MOST IMPORTANT, God-given natural resources, in large areas of our country today, lies in a degraded condition. Devoid of protective vegetation, uncared and inefficiently managed, these are truly represented as 'Waste or wasted lands'. As our total land area is constant (in economic terms inelastic) every one of us has essentially to make the best use of all the available land in our country. Land must be made more and more productive and under no circumstances anything should be done which may make our land unproductive or allow it to deteriorate in productivity. Enormous damage has been caused to our land over a period of time mostly through our faulty planning and management policy as is evident from the following

Out of the country's total geographical area of 328 million hectares, only about 140.3 million hectares is presently available for cultivation Various types of soil and land degradation problems have rendered about 175 million hectares or 53 per cent of the geographical area either completely or partially unproductive Again an area of 150 million hectares is affected by water or wind erosion Another 25 million hectare area is affected by water-logging, ravines alkaline and saline soils, shifting cultivation, etc. Further about 40 million hectares are affected by floods and 260 million hectares are subject to drought. During the four years of the Sixth Plan, 4.58 million hectares had been treated at a cost of Rs 400 2 crores During the year 1984-85, 1 41 million hectares of land is estimated to have been treated at an estimated cost of Rs 134 44 crores. As per the land use classification in India, 80 million hectares constitute barren and waste lands which could be considered fit for raising fuel wood Any attempt of developing wasteland for

fuel and other plantation is definitely to increase the employment in the rural areas considerably. These works are labour intensive and nearly 60 per cent of the cost of raising fuel and plantation goes towards wages. There is even greater employment potential in operations involving subsequent maintenance and harvesting of the crops|trees It is against this background one has to appreciate the role of developing wasteland in India. Our Prime Minister, Shri Rajiv Gandhi, has very aptly, initiated a bold step to set up National Wasteland Development Board and bring every year, 5 million hectares of wasteland under plantation. Besides, the Government's concern for preservation of forests is reflected through previous year's budget in the creation of separate Department of Forests and Wild Life. This department will have an outlay of Rs. 54 crores including Rs. 26 crores for social forestry and creation of rural wood plantation.

Land use planning

It is in this context that land use planning becomes a central part of the total planning for national development. Rough estimates reveal that categorywise at least 61 per cent of our arable lands and 72 per cent of our non-agricultural lands are degraded to a greater or lesser degree and are, therefore, producing at levels much below their full potential. These lands are also damaging our economy by contributing to floods and the premature siltation of expensive reservoirs. They also cause loss to the sea of vast quantities of sweet water which under conditions of better land management, could be retained for year round use as ground water Degraded areas may occur in various forms Ravines and gullied land occur to the extent of 3.7 million hectares all over India. According to NCA, ravines are fast spreading into cultivated lands About 8000 hectares of land is degenerating into ravines every year Inhabited areas, roads, railways and other public properties have been affected by this affliction in Madhya Pradesh, Rajasthan, Uttar Pradesh and Gujarat Then there is the land suffering from water-logging which occurs when soils are not naturally well drained Excessive surface water in such soils, often as a result of some of our massive irrigation projects results in the rise of sub-soil water till it reaches the root zone of crops The natural salts also move up with the water and deposit themselves on the soil surface resulting in the creation of saline lands The land loses its productivity and ultimately becomes barren According to one estimate, about 13 million hectares have been affected to various extents on account of water-logging and salinity As for example, the Kutch district of Gujarat has an area of 3.2 million hectares of barren and unculturable saline land An area of two to three million hectares are lying as waste in U.P. and Haryana as usar and alkaline lands. There are the degraded lands which get eroded due to loss of vegetative cover This occurs when our forests are cutdown either by commercial interest or by the pressure of vast millions of our poor in the hunt of fuel wood. Heavy and indiscriminate grazing has been another cause for eroded lands. Cultivation in the steeper slopes without adequate protection for the soil results in the washing away of the soil during heavy rains. Shifting cultivation particularly in the North-Eastern Himalayas is another major cause for subsequent land degradation.

Management of the waste-lands to maximise their productivity and optimum utilisation of the produce from land in order to reduce the present pressures on cultivable land and forests should therefore receive highest priority in our planning and allocation of financial resource exercise. The management of the waste-lands would include the physical methods to make the land more productive. This requires careful planning and an understanding of the landwater-vegetation relationship. Each of these components is essential for healthy, productive land resources. If the land has no vegetative cover the water from rainfall quickly runs over the surface and is lost for ever. Vegetation enables the land to absorb some of the water and prevents it from eroding the soil surface. The emphasis on the regeneration of waste-lands has, therefore, to be on water harvesting and afforestation. Water harvesting refers essentially to a number of techniques for trapping, storing and then channelling water for use in a regulated manner. There is also considerable scope of utilising waste waters after proper treatment. Afforestation involves the planting of various species of trees or other forms of vegetative cover. Such plantations could provide 'ecological security' and|or produce food, fibre, fodder and fuel.

The deforestation menace

The energy crisis and its effect on the economy is a matter of concern all over the world today. For nearly one-third of the world's population, the energy crisis means a scramble to find the wood they need for cooking—nearly half the timber cut in the world today still fulfils its original role for man, i.e., fuel for cooking and in colder mountain regions a source of heat However, the growth of human population is outpacing the production of fuel wood and has resulted in its acute shortage In India too, the demand for fuel wood has been constantly on the increase. A recent report of the Planning Commission estimates that all the present and projected plans will help to produce only about 49 million tonnes of fuel wood per annum on sustained basis as against the calculated requirement of about 133 million tonnes of fuel wood annually. As a consequence forests are being increasingly denuded Eighty per cent of our population which lives in the villages totally depends upon fuel wood for energy.

Due to large scale deforestation, the aggregate forest area in the country dwindled by 16.1 per cent from 5.62 lakh sq km in 1972—75 to 4.63 lakh sq. km. in 1980—82, as per the estimates made by the National Remote Sensing Agency (Table No. 1).

India has a total forest area of about 75 million hectares which forms about 23 per cent of total geographical area of the country. The per capita forest area is around 0.11 hectare. The average annual increment is 0.61 cubic metre per hectare per annum. Thus, the maximum yield from natural forests on the basis of sustained yield concept would be around 42 million cubic metres. However, not all the area under forests is presently under use. Only about 45 million hectares is being used for purposes of exploitation. Another 14.8 million hectares are considered potentially exploitable.

The recorded production of fuelwood from the forests of the country is of the order of 15 million tonnes. As regards non-forest areas, the data collected in the 28th round of National Sample Survey indicates that about 30 million tonnes of firewood is obtained from private lands and gardens and from trees around houses. In addition, another four million tonnes of fuelwood production has been estimated from plantations under social forestry schemes. A total of about 5.2 lakh hectares of area has been planted during the Fifth Five Year Plan under the scheme. This programme had been increased during the Sixth plan. It is estimated that about 15.2 lakh hectares of area was planted during this period and could produce about 12 million tonnes of fuelwood. Thus, the total availability of fuel wood is about 51 million tonnes as against the total requirement of 133 million tonnes. The question is now how to meet this deficit? Stepping up of production from the existing natural forests may not be possible in the near future because of the competing large use of the same produce for other pruposes and the limited forest area in the country. A study made by the Planning Commission recently has revealed that plantations must be raised over 1.5 million hectares of area every year for meeting the firewood needs of the country.

Afforestation endeavour

Social forestry, as the term suggests, aims at producing a flow of production and recreational benefits to the country—confined mostly to the uncultivated and barren lands and also farm lands where possible. Social forestry programmes are, therefore, associated with growing of trees for the benefit of people in their immediate vicinity. It includes establishment of a wood based production system on uncultivated barren lands for site improvement, habitat improvement major and minor forest products such as timber, fuel leaf, barks, fruits, flowers, gum, resin, etc. for the community. It envisages increased productivity from the wastelands along with the compatible objective of raising village incomes. As per the land use classification in India, about 80 million hectares constitute barren and waste lands which could be considered for raising fuelwood. It has also been estimated that the area available for tree growth along roadsides, rail-lines, canals,drains, etc. is about 9 lakh hectares. The entire land, however, would not be available for plantation purpose as large chunks are under encroachment or are not available for one of the other reasons. On a conservative estimate, even if it is presumed that 15 per cent of the above category of lands could be available for fuelwood plantation, the area works to 12 million hectares which on the basis of annual yield of eight tonnes per hectare would yield 96 million tonnes of fuelwood per annum. This order of yield would be possible with intensive research on trees for fuelwood species through modern techniques of germ plasm collection, hybridisation, tissue culture and bioengineering methods for which concerted efforts will have to be made. In terms of financial requirements on the basis of Rs. 3000 per hectare, an investment of Rs. 3600 crores would be required. The programme is likely to be faced with two problems, viz, availability of land and finance. The area under recorded wastelands in the country is large but part of this is under encroachments and rest are being used by the community as grazing grounds for their cattle. The number of cattle being large, the villagers are bound to resist attempts to bring such areas under plantations as that will result in restriction on their free use. As, however, plantation will be finally to the advantage of the very people, a lot of education, extension and motivation work will be needed to convince the communities of the benefits that will accrue by putting the barren wastelands under the tree crops. A lot of research and demonstration work will need to be organised

The finance needed for raising 1.5 million hectares under plantation per annum will be Rs. 450 crores

Wasteland development

While the Union Government has already set up a National Westelands Development Board to bring five million hectares of land under fuelwood and fodder plantation every year, it is of utmost importance to appreciate the role of National Land Resources Conservation and Development Commission (NLRCDC) as well as National Land Board (NLB)—a two tier national body set up in 1982-83 to give an impetus to the soil conservation programme. The NLB functions under the chairmanship of the Union Minister for Agriculture whereas the NLRCDC has subject matter specialists and representatives of the concerned Union Ministries. The Commission is presided over by the member in charge of agriculture in the Planning Commission. All the states and the six Union Territories have so far established State Land Use Boards (SLUB) or some alternative bodies for this prupose. Kerala and West Bengal have created separate organisational structures to help the SLUBs. Sikkim has created a separate Directorate of Land Use and Environment. The Land Use Boards in Kerala, West Bengal and Punjab have already drawn land use plans and identified priority areas for treatment. The Committee of Experts appointed by the NLRCDC has already submitted the draft outline of the National Land Use policy

Thus it is all the while more urgent now than before to co-ordinate the efforts of NLRCDC, NLB and SLUBs in the area of planning waste land development programmes, strategies and schemes. Besides, the detailed result-oriented action plan for the group of villages to develop waste land as suggested in the above paragraphs needs to be formulated, implemented and monitored. At the district level an organisational structure will have to be created which can pay undivided attention to the development of waste land on one hand and maintain effective liaison with all developmental agencies including banks in the district on the other. As the programme to bring five million hectares of land under fuel, fodder and timber plantation is indeed very ambitious and requires herculean efforts, a beginning can very well be made immediately by strengthening the office of the District Rural Development Agency at the district level and Block Taluka Development offices at the block|taluka level. These offices can very well itensify on-going schemes of social and farm forestry in the villages. Already the species of grasses developed by Indian Grass Land Research Institute at Jhansi and species of fuelwood and timber developed by Dehradun Forest Research Institute can be demonstrated on a pilot basis on lines similar to National Demonstration strategy adopted in late sixties and early seventies in case of wheat and other cereals. Besides, simultaneously R & D effort will have to be initiated and intensified through various existing research institutes by strengthening them and, wherever need be, establishing new research institutes. The present irrigation potential which is between 57 and 60 million hectares should also be exploited to develop the whole waste land on the one side and prevent land becoming further waste in future. The Social Forestry Programme has already made some breakthrough under which 1.65 million hectares have been brought under plantation, of course in a sluggish way from 1980 to 1985 and additional 3785 million seedlings were distributed among farmers for planting on their land in this period. These efforts have now to be given a scientific touch so that 70 78 million hectares of land which needs afforestation could be saved and rendered productive more and more in a timebound programme

Indian scientists have identified|described 86 trees and shrubs which are better fuel wood and could grow on watsteland. Subabul, casuarina, babuls, karanj, sisams, eucalyptus, poplar, neem, etc are few of these More stress on energy plantation programme on wastelands would confer a number of added advantages| beneficial effects. Besides yielding fuel, they help provide timber for homes and village industries, restore fertility|productivity of the land, halt desertification, prevent erosion, reduce flooding, provide animal forage and improve the micro-climate.

While the National Wasteland Development Board already established has been charged with the responsibility of formulating perspective plans and programmes for the management and development of the wasteland in the country through a massive programme of afforestation and tree planting, it would have also to encourage promote and finance programmes for the development of wasteland. In this herculean effort, the Board will have to seek peoples' cooperation and work in close collaboration with non-governmental and voluntary agencies.

TABLE I

Forest area in India—Statewise

(Area in Sq. Km.)

State/Union Territories	1972-75	1980-82	Percentage change
Andhra Pradesh	49049	40435	—17.6
Assam	21055	19796	— 6.0
Bihar	22687	20139	—11.2
Gujarat	9459	5057	—46.5
Haryana	757	401	—47.0
Himachal Pradesh	15075	9130	—39.4
Jammu & Kashmir	22335	14361	—35.1
Karnataka	29480	25655	—13.0
Kerala	8611	7376	—14.3
Madhya Pradesh	108568	90215	—16.9
Maharashtra	40682	30350	—25.4
Manipur	15090	13572	—10.1
Meghalaya	14390	12458	—13.4
Nagaland	8154	8095	— 0.7
Tripura	6330	5138	—18.8
Orissa	48383	39425	—18.5
Punjab & Chandigarh	1120	499	—55.4
Rajasthan	11294	5972	—47.1
Tamil Nadu	16676	13187	—20.9
Uttar Pradesh	25869	21022	—18.7
West Bengal	8347	6483	—22.3
Sikkim	1761	2883	+63.7
Arunachal Pradesh	5438	58104	+13 0
Delhi	18	10	—44.4
Goa, Daman & Diu	1221	1139	— 6 7
Mizoram	13860	11971	—13 6
Total	551709	462873	—16 1

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. . . It's imperative too !

Yojana Team

Development of waste lands has been in the focus in view of the growing demand for more and more cultivable land to meet the requirement of foodgrains of the ever-increasing population of the country The wasteland is being reclaimed through various schemes of afforestation, social forestry, farm forestry, etc. According to the Seventh Plan document, a total of over 302 crore seedlings were planted on wastelands exceeding the target which was fixed at 281.46 crore seedlings This showed a marked improvement in the afforestation programme as regards wastelands

The Seventh Plan document estimates that over half of the 328 million hectares of our land is in various stages of degradation About 56 million hectares of such lands are not being put to any productive use for different reasons To take care of this aspect, the Government set up the National Wasteland Development Board which formulates programmes for management and development of wastelands in the country through afforestation and planting of trees with the help of voluntary organisations, non-governmental agencies and the masses

To highlight the importance of reclaiming wastelands in the country, a national seminar was held in New Delhi from October 16 to 18, 1986 under the aegis of the Association of Wastelands Development It was sponsored by the Planning Commission, Ministry of Environment and Forests, Department of Non-conventional Energy Sources, Department of Rural Development, Department of Science and Technology and the National Wastelands Development Board. About 250 delegates from all over the country took part in the Seminar which was inaugurated by the Vice President, Shri R. Venkataraman.

The Seminar considered peoples' participation at local level as panacea in the afforestation and reclamation programme. People at local level, it felt, must therefore be made responsible for these programmes It was of the view that the leasing of public wastelands for the purpose can be of great help in increasing initiative, motivation and responsibility. In the plains, it considered as appropriate to lease out lands to individuals or individual families, but in the hilly terrains inhabited by tribals, it recommended leasing to smaller community holdings To meet the above objective, the Seminar recommended modification of the existing laws on the subject

The Seminar strongly recommended that the whole programme of land reclamation and afforestation must be made the peoples' programme by involving local people, especially school children It considered 'learning through doing' as the best and surest way of raising awareness and responsibility.

Another important recommendation of the Seminar was that in future, industries, human settlements and network of roads, etc, should be promoted in the wastelands Also, in locating agro-progressing industries on wastelands, preference may be given to locations close to the areas of produce of the agricultural raw materials Moreover, industries may be promoted to plant trees within the wastelands for their own use.

The Seminar felt that the development of nursery for planting trees on wastelands is viable at local scales and also a source of revenue to small and marginal farmers. So organisation of nursery-grower should be promoted In view of this, development of saplings in the nursery may be considered as an industry. New technologies of plant breeding and tissue culture for afforestation and crop production should be applied on a large scale involving various research institutes and agricultural universities

The Seminar expressed concern for lack of necessary care and irrigation which result in the early withering of saplings planted during the year I recommended strengthening of proper irrigation and management facilities to increase the survival rat

of the saplings. Peoples involvement in this, the Seminar felt, will again be of immense importance. It recommended, therefore, imparting of training, education and awareness about scientific management of forest and agriculture techniques, reclamation procedure of wasteland and selection of suitable plant species in a given area. For this, it felt an urgent need for using audio-visual techniques, schools and mass media for dissemination of information.

The Seminar recommended the setting up of Institute of Wastelands Development to carry out various socio-economic studies to find out suitable and adaptable technologies for development of wastelands. In no circumstances, it felt, the existing forests be allowed to be destroyed and social forestry expected to compensate it. Moreover, wild-life sanctuary of animals of different kinds may form an important component of afforestation in wasteland development programme

The Seminar wanted the definition of wasteland to be standardised as early as possible. Because, it felt that the classification of the wastelands is required not only in terms of the cause of degradation, but also in terms of its possible productivity and viable plants and plant groups. In view of this, identification and mapping of different kinds of wastelands may be finalised and mapping undertaken as early as possible. The Seminar, therefore, recommended the establishment of a computer-based data bank at State and Union levels The Seminar wanted studies to be undertaken to evaluate the suitability of various technologies for the development of different wastelands in different locations It is imperative, it felt, to identify viable plants and plant groups in different locations There is also a need to investigate the economic feasibility of reclamation for each of crops and vegetable use, afforestation, orchards or fodder cultivation Various institutions and research institutes like ICAR, CSIR and universities may be involved in these analytical studies

Inaugurating the Seminar, the Vice President, Shri R. Venkataraman warned against a total ecological disaster by the turn of the century if vigorous steps were not taken to restore harmony between man and nature. This harmonious relationship, he said, gave nature's bounty to man. The loss was recompensed adequately by the self-generating process of eco-development Shri Venkataraman highlighted the problems caused by unscrupulous deforestation which caused emergence of wastelands everywhere. He said that 175 million hectares of a total of 226 million hectares of land available for agricultural use were wastelands because of degradation in some form or the other. The Vice President lamented that every year the country was losing 1.5 million hectares of forests and 12,000 million tonnes of top-soil because of deforestation and run-off

Shri Venkataraman called for embarking on a massive afforestation programme on a war-footing by mobilising every resource and by adopting imaginative strategies. He said that according to a study, it took between 500 and 1000 years to restore one inch of top soil and upto 100 years to re-establish a good natural forest. The Prime Minister, he said, set up the National Wastelands Development Board in 1985 to achieve the objective of afforestation of five million hectares of land every year with special emphasis on planting trees producing fuel and fodder. He wanted the task of afforestation to be converted into a peoples' movement and also involve, to the maximum extent, voluntary agencies and other institutions.

The Vice President called upon the schools throughout the country to motivate children towards improvement of ecology and said that they must be taught "if we are to survive on this earth, we must protect our trees". He also exhorted the scientific community and research institutions all over the country to direct their energies and to devote more attention on research for improvement of ecology and to evolve better afforestation techniques for wastelands.

The Union Minister of State for Environment and Forests, Mr. Z. R. Ansari, speaking on the occasion, highlighted the importance of trees in the life of man and called for peoples' involvement in the conservation of forests. He wanted the seminar to suggest measures to integrate various efforts for conserving forests and developing wastelands.

Dr. Kamala Choudhry, Chairman, National Wastelands Development Board, in her keynote address, wanted 33 per cent of the geographical area to be brought under the forest cover. She said, at present, only 11 to 12 per cent of the area in the country was under the forest cover She said unless massive afforestation was undertaken, we would be facing unprecedented ecological crises. Dr. Choudhry lamented that upto 1982 India lost about 52 per cent forest resources She also emphasised the need to enlist peoples' participation in the task of afforestation and development of wastelands.

The degradation of land varies in nature and intensity from region to region and seriously affects land under agriculture, forest, pasture and human settlements. According to an estimate over half of the 328 million hectares of land in the country is estimated to be degraded. This is a rough estimate. More authentic data on the extent of land degradation is now being compiled with the help of satellite by the National Remote Sensing Agency. According to an exercise, the country has been losing forest cover at the rate of 1.5 million hectares per annum. Wastelands are largely man-made and cause misery to millions, especially those in the rural areas.

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What's wrong with hill area development?

Pandurang Hegde

The Seventh Plan document on Hill Area Development Programme, according to the author, is a pandora's box of contradictions between its basic objectives and specific projects. He feels the forest-based capital-intensive industries will adversely affect the local population and ecology of the hill areas and, in the long run, convert the renewable forest resource into a nonrenewable resource thus affecting the nation as a whole ! So the author points out that these concepts as envisaged in the Seventh Plan, especially for the North-eastern region, are against its basic objectives of ecological protection.

IN THE INITIAL FIVE YEAR PLANS the emphasis in hill area development was broadly on three areas—agriculture, road building and other development work. Of these three, first two areas received special and greater allocation of funds and importance. By 1970's this approach started showing adverse results as depleted forests and natural resources caused land slides in hills. The recurring floods in the Ganga opened the eyes of the planners. They realised the importance of conserving watersheds in hill areas to restore the health of plains. This shift in ideas towards ecological factors of integrating hill areas and plains as a totality lead to the formation of Hill Area Development Programme (HADP) in Fifth Five Year Plan in 1974—79.

What is hill area?

The hill areas are broadly classified into two categories. States like Jammu and Kashmir, Himachal Pradesh, and Sikkim and other smaller states form the first category where almost the entire area of the state is hilly area. These states are being treated as special category States. In the second category come those states where hill areas form only a part—(a) states of Assam, Uttar Pradesh, West Bengal and (b) Western Ghat areas covering 163 talukas of Maharashtra, Karnataka, Kerala, Tamil Nadu and Goa. Only this second category is covered under HADP. The Himalayan region covers an area of 68.[illegible] thousand sq. kms. with 59.8 lakh people. The Western Ghat region covers a larger area of 160.[illegible] thousand sq. kms with 388.4 lakh population.

Ecological aspect

The Seventh Plan section on HADP admits that in fifth and sixth plans the "tenor of the plans did not differ significantly from normal state plans." The Seventh Plan calls for consideration of ecological aspects at the stage of formulation of policies, programmes and schemes The plan document links the disasterous environmental affects of floods and water scarcity to depletion of forests and other natural resources It calls for maintaining the ecologica

equilibrium to serve the needs of the nation and local community. Frequent references are made to ecological aspects.

The basis of HADP is to promote a basic, secure life support system for local people and also to protect the interest of people in plains. The strategy centres around participation of local people, especially women and children in managing society's resources at local level. The plan calls for inculcating ecological awareness among local people, so that the harmful affects are prevented in advance.

Meeting of basic needs like energy, fodder, water, education and health is given foremost importance in formulation of development programmes. This shall reduce the drudgery of women and children providing alternative energy sources and introduction of fuel efficient ovens will definitely go a long way in reducing drudgery of women and reducing the pressure on forests. Preventive health care, safe drinking water and education are basic essentials for reasonable living.

The HADP in Seventh Plan has discussed various issues in addition to basic needs approach. We will review some of the important issues discussed in the plan document in the light of the grassroots experience.

The land use

The Plan envisages a proper land use pattern to attain self-sufficiency in food and at the same time calls for 'scientific land use' aimed at increasing productivity and product changes in land. The planners foresee an external market for increased yield and call for strengthening communication and market network This objective of land use is self contradictory. The recent changes in cropping pattern from traditional food crops to cash crops like potato and soyabean has definitely linked hill economy to large market economy of plains. But in this process the change in land use has affected the food self-sufficiency of the hill village as the shortage of foodgrains has forced people to import foodgrains The introduction of horticulture crops has destroyed oak forests of the Himalayas. In the Western Ghat belt the rapid increase in coconut plantations has put extra pressure on forest and water. Learning from these mistakes we have to evolve a rational land use policy wherein the soil is used to produce the basic need, foodgrain.

Protect hill forests

The plan document makes it clear that the revenue-earning can no longer be a major goal of forestry programmes. However, in the same tone it says "the forestry programme will aim at meeting the needs of national requirement of forest produce and needs of village community." The conflict between national interest of meeting the demand of forest based industry and the ecological consideration of soil and water conservation is not examined clearly.

The plan seeks to identify sensitive areas in hills for treatment. This is a big fallacy as the present condition of hills in country is in such a critical stage that the whole nation is suffering from recurrent floods and droughts. The need of the hour is to take a comprehensive decision to save the hills, not an ad-hoc approach or patchwork to bandage the wounds of hills. The hill forests of the country should be declared as protected forests, the basic resource providing soil and water. The moratorium on felling trees that exists in hills of Uttar Pradesh should be extended to Western Ghats.

Reduce grazing presssure

There is a very close link between hill economy and agriculture. In recent years the increase in cattle population has led to greater pressure on limited grazing land and forests. A recent study on pressure of grazing in Garhwal by Dr. R. K. Gupta reveals that the pure grazing pressure in Chamoli district is 4.05 times more than normal. This shows the eventual limit we have reached and the pressure on carrying capacity of land. The pressure in other hill areas and Western Ghats may be more. So the immediate requirement is to reduce the grazing pressure by introducing the practice of developing pasture land.

Develop cottage industries

The document is very pragmatic with regard to the plans of developing decentralised cottage industries based on local resources. However, the skills need to be updated and new skills have to be taught from basic educational level.

It calls for organising tourism and trekking as an industry with due regard to local resources. This concept has its own drawbacks as tourism in places like Mahabaleshwar in Western Ghats, Maharashtra, or trekking in Himalayan high altitude has serious ecological and social implications. The closure of the Valley of Flowers in the Himalayas to tourists due to the destruction of fragile ecosystem is a pointer in this case. The whole idea needs a careful, cautioned approach.

The Seventh Plan document calls for a half in building extensive road network in hills. This is a great relief. Himalayan region is based on 'money order economy' as people working in plains send money order to their families. So the need is to strengthen postal service and communication system.

Save forests

While laying special emphasis on eco-restoration and eco-protection of Western Ghats, the task of designing policies has been left to respective states. The previous experience shows that these states have

virtually depleted the tropical forests of Western Ghats. This was done under the name of 'development'. To take an example, Kerala, a hilly state represents 42 per cent of entire Western Ghats. The percentage of forest cover to total geographical area in 1905 was 44 per cent. In 1984 it was a meagre 9 per cent. The minimum requirement in this hill area is 66 per cent. Now the State is suffering from serious water shortage, even with high rainfall. The power generation, industry and agriculture are adversely affected. The development policies carried on by state, mainly replacing natural forests with plantation crops, and construction of dams have been responsib'e for such disruption in ecology. The situation in Maharashtra, Karnataka and Goa is still worse. These states still continue the same 'development' schemes leading to total destruction of Western Ghats. It is necessary to specify and evolve a concrete common programme to save Western and Eastern Ghats which supports so many people in South India

The contradictions

The specific suggestions for development of North Eastern Hill region in the Seventh Plan are questionable. The Government of India has dec'ared entire North-Eastern Region as industrially backward area. This entitles the region with investment subsidy at maximum permissible rate. The natural resources like forests are treated as inexhaustible resource. During Sixth Five Year Plan a paper project was started in Nagaland under the central sector at the estimated cost of Rs. 84 crore. Two more paper projects with an estimated cost of Rs. 226 and Rs. 228 crore are under construction in Assam. These forest-based capital intensive industries will adversely affect the local population and ecology of the area. These attempts to establish forest-based industries will in the long run convert the renewable forest resource into a non-renewable resource affecting the nation. These concepts envisaged in Seventh Plan for North Eastern region are surprisingly against its basic objectives of ecological protection.

Thus the Seventh Plan document on HADP is a pandora's box of contradictions between its basic objectives and specific projects. In addition to these contradictions, there are broadly three major drawbacks in the document.

First of all, the policy laid down in the Seventh Plan is rarely followed by States. The review of previous work of HADP has clearly brought out this fact. The present plan of HADP may also follow the same precedent.

Secondly, other hill areas like Aravali, Vindhya, Satpura are not included in HADP. These areas also represent important hill areas of our country. Even in present HADP, more weightage is given to Himalayan region as compared to the fragile tropical eco-systems of Western Ghats.

Thirdly, the contradiction in objectives and specific suggestions is the outcome of top down model of planning. The specific suggestions are based on the report of working group on HADP whose members, experts or academicians, are without any feel of grass-roots problems. This top down model of planning has failed to incorporate the aspirations, the realities of local population.

Nevertheless, the Planning Commission has tried to rectify these lacunae by setting up Advisory Committee on HADP. This comprises of 17 members, with the main task of advising on HADP based on reality. Unfortunately, most of the members are again pure academicians with only two grassroots level workers. It is hoped that the Planning Commission will gradually bring in more grassroots workers in the planning process to pave way for bottom-up model of planning. □□□

Advisory body on women's employment

The Government is setting up an Advisory Committee on employment of women. It will look into their employability, generation of employment, training, recruitment and new avenues.

A special project for the development of Women's Vocational Training Programme has been launched with National Vocational Training Institute for Woman at Delhi and its regional centres at Bangalore Bombay and Trivandrum.

Hindustan latex achieves a record

The public sector, Hindustan Latex Limtied achieved 100.6 per cent production rate during 1985-86, which was all-time high. The company earned a net profit of Rs. 94.23 lakh and declared a dividend of Rs. 16 15 lakh.

A most modern plant in collaboration with a Japanese firm was recently set up in Trivandrum. It has gone into production of extra thinner variety of condoms (Nirodh). □

Indira Vikas Patra launched

A new small savings certificate, Indira Vikas Patra was launched in the country on November 19, 1986 The investment in this certificate will double in five years. It will be available in two denominations, of five hundred rupees and one thousand rupees, and can be purchased from the post offices at half their face value.

The Indira Vikas Patra will particularly benefit the people in rural areas and others who do not pay income-tax. The rules governing the certificate have been kept very simple. It will not be necessary to fill up any form to purchase or to encash the Patras. The Patras can be transferred freely. The certificate will, however, not enjoy any tax concession. □

Rural Development needs a complete approach

Suraj Pal Singh

The theories of 'Growth Centre Approach' and 'Cluster Concept' of the spatial planners both complementary to each other, says the author, are incomplete without a proper development policy at local level wherein the skills of local experts are put to optimum use. For faster development, the author, therefore, advocates a three-tier, approach comprising (a) delineation of village clusters; (b) identification of nucleus village; and (c) formulation of a development policy at local level for each cluster.

TO STRENGTHEN RURAL DEVELOPMENT programmes, spatial planners have been trying to search a development strategy since long. In the early 1970's a search was on by spatial planners to identify potential service centres in the community development blocks to provide amenities and services. In 1977 another search was on by spatial planners to formulate minimal planning units (village clusters) below block level for actual develoment without an uneconomic expansion of the existing spatial structure of basic amenities and services. Obviously, the planners do not agree in adopting development strategy for rural development up till now. They seem to be divided in two groups in this context.

One group pleads for growth centre approach of Christaller and the other recommended for cluster concept of Dr. V. K. R. V. Rao. The notable spatial planners who adopted growth centre approach with suitable modification to identify the hierarchy of settlements within their study region are, Lalit K. Sen, V. L. S. Prakash Rao, Waheeduddin Khan, R. P. Misra, L. S. Bhat. The Cluster Concept is embraced by V. M. Rao, H. Ramachandran and M. Vivekananda.

Growth centre approach

The advocates of modified growth centre concept pointed out central villages as nodal points in regional space The provision of package of functions to central villages along with the development programmes, are expected to generate the nodal points which in turn generated development impulses in their hinterland.

Cluster concept

"The idea behind the cluster approach is that single village cannot be made units for integrated rural development, as a majority of Indian villages are of a population size below 1000 each and do not possess either the basic amenities of infrastructural resources or the diversified occupational pattern or the market needed for viable and some

measures of autonomous development. At the same time, units of a much larger size such as blocks selected for the community development programme do not make for local participation at the grass-roots level nor does it provide an all round development of their constituent villages. What has also become clear from studies of rural development is that the percolation theory does not work but only leads to scattered bases of development areas in desert of a multitude of poverty stricken and under-developed villages. Even the modified growth centre approach suggested by Lalit Sen of a twotier hierarchy for development of dependent and central villages does not solve the problem. Hence the suggestion for making a cluster of an appropriate number of villages as an integrated unit for development at the grass-roots level".

The crucial distinction between the approaches of spatial planning and approach implied in 'clustering of villages' is that the 'modified growth centre approach' attempted to identify the hierarchy of places in a region based on the functions of the settlements and suggested some more functions based on the functional gaps. Hence, 'cluster approach' attempted for making a cluster of an appropriate number of villages as an integrated units for development at grass-roots level based on geographical contiguity and also the factors that do or can interlink them. In real sense, both the approaches seem complimentary to each other. Therefore, the delineation of a cluster of an appropriate number of villages as an integrated unit is essential for development at grass-roots level. The identification of central villages amongst the constituent villages of such cluster is also essential to establish the services at a proper place. In the context of grass-roots level planning for rural development both the approaches form a partial approach towards this end. Neither the modified growth centre approach nor the approach implied in clustering of villages are the solutions of the problem.

Development policy, a must

Every village cluster has some local problems or felt needs which constantly hamper the development of the cluster. Besides, every village cluster has some local resources and skills which can certainly help in the development of the cluster. Various types of resources, skills, needs and problems are found different in different village clusters. In the present situation it is beyond comprehension that rural development can be affected only by the delineation of village cluster or by the identification of central village. Clustering of villages and identification of the central village amongst the constituent villages of such cluster though basic cannot be the final.

Three-tier approach

Indeed rural development needs a complete approach to reach the destination. After delineation of a village cluster and identification of a centra village for that cluster, attempt should be made t formulate a development policy at local level fo that cluster. "The policy should be linked with th local resources of the cluster. The skills of the loca experts of the cluster should essentially be utilise for the development of that cluster. Local needs o that cluster should also be considered while formulat ing the policy, The local problems which are usuall responsible for the backwardness of that cluste should be borne in mind while framing this policy It is nevertheless true that a cluster of village needs strong internal links and bounds built up i the course of working for rural development whicl reward all, particularly the weak and the poor Besides, the nature, quality and endurability of rura development achieved depends primarily on hov well the cluster functions. For the smooth functionin of village cluster a clear-cut-course of action (deve lopment policy) is required at the grass-roots level Obviously, a complete approach for rural develop ment consists of three tiers, viz., delineation o village clusters, identification of central villag amongst the constituent villages of the clusters an formulation of development policies at local leve for each cluster Following is the complete approacl for rural development :

The Three Tier Approach for Rural Developmen

Tiers	Criteria
(1) Delineation of functional units (village clusters) at the grass-roots level.	It should be done on the basis of the contact pattern of villages for the purchases of agricultural inputs and the consumer items of daily needs of the villagers.*
(2) Identification of Central village in the cluster.	It should be done on the basis of functions of the constituent villages of the cluster.**
(3) Formulation of development policy at local level for each cluster.	It should be framed on the basis of the local resources, needs, problems and skills of each cluster.***

Delineation of village cluster

Dr. M. Vivekananda has delineated village cluster in his study area by taking into account the presen level of development of amenities and services an the existing contacts of villages for marketing an employement. It is found in my study area that th villages depend very little on other places for sellin their agricultural produces in comparison to th purchasing of agricultural inputs and consumer item of daily needs of villagers due to the practice o traders visiting different villages for purchasing th agricultural products on the spot. Another fact ha also emerged in my study area that most of th central villages do not contain such employmen

opportunities which may give rise to daily contacts of other villages towards one particular place. Generally, the labourers of the villages depend on the agricultural resources locally for their livelihood. Besides, the rural labourers are also employed in road and canal repairs. But these opportunities of employment are neither stable nor related to any particular place. About the contact pattern of villages for the acquisition of services and amenities my study also certifies the fact that each village wishes to contact that place which he frequently visits for purchasing the agricultural inputs and the consumer items of daily needs. Though, for obtaining the reserved services like cooperative societies, fair price shops, each village remains bound to seek them from fixed services centre. Yet, it is calculated fact that maximum benefit is obtained by those villages which maintained their daily contacts for the purchasing of agricultural inputs and consumer items of daily needs with that place where such facilities are available. The village which does not maintain their daily contacts for the purchases of agricultural inputs and consumer items of daily needs with the service centre and has been attached with the centre only from the administrative point of view, receives the least advantage of facilities. Evidently, the delineation of unit areas (village clusters) for planning purposes at the grass-roots level should be based on the contact pattern of villages for the purchase of agricultural inputs and the consumer items of daily needs of villagers.

Identification of unit centre

The unit centre should not be identified on the basis of the service functions of the settlement. Since, it is found in many cases that a village provided with a number of services, does not act as central place. It is due to the choice of wrong locations of services which are often motivated by narrow political considerations. Commercial functions of the settlement should essentially be considered for the identification of the unit centre. Commercial functions are the self developed functions in a settlement and display the real centrality of the settlement. K. N. Singh's formula is suitable for the identification of the unit centre. The formula is :

$$\frac{N.\ 100}{P}$$

Whereas : C—Desired centrality of the place.

N—No. of people dependent upon commerce.

P—Population of the place.

***The following plan (Singh, Suraj Pal, 1986) offers a course of action for rural development planning related to a primary planning unit (village cluster) at the grass-roots level :

The Plan

Level	Plan Components	Planning Tasks (Illustrative)
0	1	2
(A) Primary Planning unit level.	(a) Local natural resources inventory.	Appraisal of local natural resources like land, soils, water, minerals and natural vegetation of the unit.
	(b) Local circumstances planning.	Planning for the eradication of the local problems like water-logging, low water table, brackish water, soil erosion, USAR land and other waste land.
	(c) Planning for local needs:	
	(i) General services planning.	Planning for middle school, post office, medical dispensary, multipurpose workers centre, scheduled bank, fa · price shop, weekly market and public library.
	(ii) Agri-support services planning.	Planning for agricultural cooperative society, seeds and fertilizers depot and purchasing centres for agricultural commodities like wheat
	(iii) Transport Planning.	Planning for inter-village roads, approach road between unit centre and the main road of the area, bus facility linking unit centre to district headquarters.
	(iv) Communication planning.	Dissemination of scientific informations, diffusion of innovations and inventions, demonstration centres for applications of science and allied activities.
	(c) Planning for local skills of the unit	Identification of skills and survey of employment status, assessment of credit needs and formulation of bankable projects, supply of raw materials technical assistance and marketing facility for the disposal of manufactured goods, functional training for employable skills including farmers and rural artisans training.

0	1	2
(B) Constituent village level.	(a) Planning for village reconstruction.	Planning for village leadership, public buildings, maintenance and improvement of village streets including drainage and sanitation. Environmental planning, family planning and other welfare programmes.
	(b) Planning for basic minimum needs.	Planning for drinking water supply, nutrition, health, housing, village electrification, primary education and other literacy programmes, domestic fuel
	(c) Village productivity plan.	Determination of cropping pattern and crop rotation for the village. Planning for farm infrastructure, farm inputs, farm production, water supply system for irrigation, small industries, local business and other commercial activities.
	(d) Spatial planning for unskilled population.	Family base planning for income viability. Vocational training for employable youth.
	(e) Planning for social reform.	Household survey of the various social problems facing the families of weaker sections of the society. planning for the immediate solution of these social problems. Planning to subside the local disputes of the villagers. Planning for the eradication of various social evils like dowry system, exertion of large feasts, jealousy with one another, vexation of weaker section by strong section of the society and other prevalent social traditions and mal-practices and customs, obstructing rural development of the village

At present Nyaya-Panchayats are functioning as primary planning units at the grass-roots level. The Nyaya-Panchayat Kendras are designed to function as central villages through which all rural development programmes could be carried out. These Nyaya-Panchayats are not suitable for planning units as they were formulated on the population criterion alone. It is also found in many cases that the Nyaya-Panchayat Kendras are not located at the proper village. These Nyaya-Panchayats should be reorganised and Nyaya-Panchayat Kendras should also be reidentified according to the principles enunciated in the present article. After the reorganization of the Nyaya-Panchayats and reidentification of Nyaya-Panchayat Kendras attempts should be made to formulate a development policy at local level for each Nyaya-Panchayat according to the course of action presented in the present article. How a Nyaya-Panchayat can be made economically viable? How a Nyaya-Panchayat can be made administered properly; what types of difficulties will arise in the execution of a development policy in a Nyaya-Panchayat; are the questions which need to be studied and answered in depth. □

Environment Act becomes operative

As a tribute to late Shrimati Indira Gandhi, the Environment (Protection) Act, 1986 was brought into force from November 19, 1986, the day she was born 69 years ago. The Act, which received President's ascent in May 1986 comprehensively covers the environmental aspects encompassing every facet of national life.

As a significant move the Government also announced adoption of the Minimum National Standards (MNS) in respect of the following industries as statutory standards, thereby rendering their violation a cognizable offence : (i) Caustic Soda Industry; (ii) Man-made Fibre (Synthetic) Industry; (iii) Oil Refinery Industry; (iv) Sugar Industry; (v) Thermal Power Plants; (vi) Cotton Textile Industries; and (vii) Composite Woollen Mills.

Measures are also underway to formulate standards in respect of other industries. The Central and State Boards for Prevention and Control of Water Pollution, besides enforcing these standards in specific situations, are also empowered to prescribe more stringent standards. □□□

New agriculture policy

T. V. Satyanarayanan

A revised agricultural price policy and an advance announcement of procurement and support prices, the author feels, will bring in the awaited change in the cropping pattern and with it the required rectification of imbalances in production. These two factors as spelt out in the government's new long-term policy on agriculture, the author says, are bound to give a further fillip to our agricultural development.

The enunciation of a longterm perspective in agriculture price policy is a timely step to give a further push to our spectacular development in agriculture. The policy paper, presented to Parliament by the Agriculture Minister, Mr. Gurdial Singh Dhillon, takes into account the changes in our agricultural scene since the successful completion of the first phase of the Green Revolution and ushering in of the second.

Undoubtedly, the strategy adopted in the successive plans to achieve the goal of self-sufficiency in foodgrains has paid rich dividends. Despite the strides in agricultural development, however, some imbalances persist—crop-wise and region-wise which need to be rectified. The time has, therefore, come to take a fresh look at the agricultural price policy and chart out a long term perspective to make the farm sector more vibrant, more productive and more cost effective and to integrate it more closely in the strategy for balanced national development. This may call for re-arrangement of priorities in which the price policy will have to play a vital role. The price policy, in fact, has to balance a variety of consideration like incentives to growers, justice to consumers, integration with the international economy, demands of regional development and rational utilisation of resources.

Surpluses and shortages

The paradox of our agricultural development is the co-existence of surpluses and shortages. On the one hand, there has been a welcome extension in the production of wheat and rice, with foodgrains stocks with Central agencies mounting up well above the buffer stock norms. On the other hand, there have been shortfalls in the production of oilseeds, pulses and sugarcane in relation to the demand. Consequently, there have been large scale imports of edible oils and sugar to meet the domestic needs.

Cropping patterns must change

One reason for this imbalance is that the farmer has diverted his land to grow mainly risk-free crops, for which a productive technology, a better delivery service and a higher price have tended to increase the earnings.

In this context, a question is asked whether the price mechanism can be used as a tool to influence the cropping pattern in a desirable direction in the overall interests of the people. The policy paper answers this question. It says while price changes can bring about alterations in the cropping pattern, the price policy should continue to be judiciously implemented in conjunction with a viable technology, delivery services and input prices for achieving a rational cropping pattern. Operated in isolation, the price factor

(continued on page 21)

Small scale sector: problems and prospects

R. Jaya Prakash Reddy
&
Dr. G.N. Brahmanandam

The small scale sector has made significant contribution to the Indian economy in terms of growth and employment. But, according to the authors, it is plagued by many problems, prominent among them being finance. Given the necessary thrust, this sector can become a stabilising factor in our economy. The authors say the government action in reserving certain items for exclusive production in the small scale sector has given the necessary fillip to it but these are not enough to sustain growth. Therefore, the authors advocate the establishment of a Small Industrial Development Bank on the pattern of IDBI and NABARD to cater to the financial needs of the small scale sector.

POLITICAL FREEDOM has no significance without economic freedom. Acceleration of economic growth so as to make the people free from want has become a great necessity in a developing country, like India. The prosperity of our country can't be measured only on the basis of development of big industries. We have, therefore, accepted a broad-based economic policy in which small entrepreneurs have enough scope to provide work for themselves and others. Small scale industries adequately fulfil the job by virtue of their inherent features of labour intensive and capital sparing.

The further importance of small scale industries can be realised from the various advantages which they possess :

— they offer a quick and convenient tool of carrying industrialisation to the rural areas;

— they are labour oriented, utilise less capital and provide more employment with existing resources and, thereby, facilitate regional balanced development;

— they offer a means of mopping up rural savings by providing channels of investment and making available consumer goods which would raise the standard of living;

— they can be managed by the personnel available in the country and the talents required for this purpose can be trained quickly ;

— they provide employment without adversely affecting the main occupation namely agriculture. The illiterate masses of rural areas can undertake work in off seasons in these industries ;

— They avoid social overhead costs when worker remains in own house in village versus factory—streets, water, schools, etc.;

— The creation of a network of small scale industries opens up more sources of supply

and demand opportunities for large scale industry and imparts strength and viability to the industrial sector ;

— for producing articles and goods tailored to customers' requirements that require more manual and specialised skills and also for those goods which have limited markets, small scale industry is the only answer ,

— for the expansion of international trade, for securing favourable balance of payments and strengthening the socio-economic ties with other nations, small scale industry is essential ; and

— small scale industry offers opportunities to men with small means but with initiative and skill to set up their own business and conduct it with a degree of independence.

Role of government

The Government of India realising the above mentioned socio-economic significance of the role of small scale industries, initiated several positive measures for their development. The industrial policy procurements, the progressive allocations made in the Five Year Plans, the creation of different promoting and supporting organisations and the nationalisation of commercial banks reflect the spirit and effort of the Government towards the creation of a favourable climate for the growth and working of small industry.

Since the introduction of Five Year Plans the Government has been following a policy of reservation of items for their exclusive development in small scale sector. During 1967-68 there were only 126 items in the reserved list, this number is gradually increased to 872 by the end of 1984-85. This is being constantly reviewed and revised. The data presented in Table 1 support the view.

Table : 1 : Number of items reserved for small scale sector

Year	No. of items		Cumulative reserved
	Reserved	Dereserved	
1967—68	126		126
1969—70	6		132
1970—71	84		216
1973—74	117		333
1976—77	4		337
1977—78	470		807
1978—79		1	806
1980—81	28	1	833
1981—82	11	13	831
1982—83	9	3	837
1983—84	35		872
1984—85			872

Source : Hand book of Reserved Small, Cottage and tiny industries, SBP Board of consultants and Engineers, 8th Edn., 1986.

The resolve to develop small industry through plan allocation shown in Table 2 has laid a solid and sound base for the study and significant growth and working of small industry as outlined later.

Table 2 : Outlays for the development of small scale industries in the Five year plans

(Rs. in crores)

Plan	Plan period	Total outlays
First plan	1951—56	5.20
Second plan	1956—61	56.00
Third plan	1961—66	113.06
Annual plans	1966—69	53.48
Fourth plan	1969—74	96.19
Fifth plan	1974—79	221.74
	1979—80	104.81
Sixth plan	1980—85	616.10
Seventh plan	1985—90	1,120.51

Source : Report of Small Scale Industry Development Organisation, 1981-82.

: Planning Commission, GOI, Seventh Five Year Plan, 1985-90, Sectoral programmes of development Vol. II.

Growth and working

The small scale sector which plays a pivotal role in the Indian Economy in terms of employment and growth has recorded a high rate of growth since independence in spite of tough competition from large sector. As per the figures supplied by the office of the Development Commissioner (Small Scale Industries), there were a total of 7.34 lakh small scale units in 1978-79, which rose up to 12.8 lakh units by the end of 1984-85 recording an increase by about two-fold in a span of six years.

*Employment

The root cause for unemployment in India is the overgrowing population which has outpaced the development of industry and agriculture. For a country like ours, with limited financial resources and huge reservoir of human resources, small scale industry is a means for solving the unemployment problem

Small industry, with its inherent nature of labour intensiveness has been providing employment at an increased rate which is evident from Table 3. The employment generated by the small scale industry increased significantly to 90 lakhs by 1984-85 from 63.8 lakhs in 1978-79 with a rise of 32 per cent.

The value of investment has grown considerably. By the end of 1983-84 it went up to Rs. 7,360 crores from only Rs. 4,431 crores in 1978-79, even if due allowances made for the fairly steep increase in the price of investment goods, the fact remains that the phase of investment in this sector is quite good.

Output

Small scale industry has been contributing significantly to the gross National product of the country. Table 3 shows that the total production of small industries was Rs. 15,790 crores in 1978-79, Rs. 35,000 crores in 1982-83 and Rs. 50,520 crores in 1984-85. During the short period of five years ending 1983-84, the production in the small scale sector has recorded an increase of 60 per cent in real terms. It is important to note that the output of the small scale sector rose at a faster rate than that of large scale sector. The total value of production by village and small scale industries during the 7th plan period is projected to rise to Rs. 83,069 crores from Rs 49,027 crores anticipated during the 6th plan period. If a big thrust is given to the small sector, it can become a stabilising factor in a capital-scarce economy like India by providing a higher output-capital ratio as well as a higher employment-capital ratio.

Exports

Small scale industry has registered a pheaomenal growth in the export field by contributing substantially to the total national earnings from exports. It has entered into hitherto untapped markets of advanced countries against stiff competition from the developing nations. The increase in the share of exports of small scale industries in the total exports is depicted in Table 4. As against an estimated export turnover around Rs. 150 to 200 crores in 1970-71. exports from small scale industries amounted to Rs. 2049 crores in 1982-83, thus increasing its share in the total exports of the country from 13 to 24 per cent. In 1983-84, the aggregate exports of small scale units rose to Rs. 2,350 crores—or by 120 per cent as compared to the 1978-79 level and accounted for nearly 25 per cent of the value of exports during that year. The aggregate share of small scale industries is still higher as it does not include indirect contribution of small scale sector to total exports.

Problems of small scale sector

Small scale industries in our country lack the entrepreneural ability to develop initiative and undertake risks in the unexplored industrial fields. The inefficiency in management comes first among managerial problems. The poor training imparted by the owner-manager leads the concern bongling. As the capital invested is very low, there is no scope for specialisation in any discipline. Hereditary entrepreneurship, often lacking in proper planning and forecasting and involving family feuds brings down the efficiency of the management.

Small units also suffer from the problems of inadequate work space, power, lighting and ventilation, absence of sanitary and safety measures and lack of measures for test control etc. These shortcomings have endangered the health of workmen and adversely affected the rate of their productivity. Many units are following primitive methods of production. Adoption of modern techniques is either disliked by the entrepreneurs or not feasible. Many units are suffering from shortage of finance required for modernising equipment and expanding business. Wage rates and service conditions of small industries are not attracting skilled labour. Finally, poor technology is causing some technological problems in small scale Industry.

Lack of standardisation, absence of trade name, absence of proper casting procedure, lack of contact with wider market and knowledge and techniques of marketing are the main constraints in the marketing techniques of the small scale industrial units. Often small entrepreneurs are dependent on middlemen who have monopoly over the markets. They do not have the resources to advertise and their direct contracts with the customers are limited

Any problem, whether of production, raw material, power, transport or marketing faced by an entrepreneur in its ultimate analysis turns to be a problem of

Table 3
Selected growth Indicators of Small Scale Industries during 1978-79 and 1984-85

Year	No. of Units (Lakhs Nos.)		Total No. of Units (Lakhs Nos.)	Production (Rs. crores) at current prices	Production at 1970-71 prices (Rs. crores)	Employment (lakhs Nos.)	Investment (Rs. crores)	Exports (Rs. crores)
	Regd.	Unregd.						
1978-79 . . .	3.34	4.00	7.34	15,790	8,787	63.8	4,431	1,069
1979-80 . . .	3.92	4.13	8.05	21,635	10,025	67.0	5,540	1,226
1980-81 . . .	4.48	4.20	8.74	28,060	10,906	71.0	5,850	1,643
1981-82 . . .	5.23	4.39	9.62	32,600	11,837	75.0	3,280	2,070
1982-83 . . .	6.03	4.52	10.55	35,000	12,800	79.0	6,800	2,094
1983-84 . . .	6.79	4.71	11.50	41,620	14,040	84.15	7,360	2,350
1984-85 . . .	7.89	4.91	12.80	50,520	N.A.	90.0	N.A.	N.A.

Source : Development Commissioner, Small Scale Industries,
N.A. : Not available.

Table 4

Share of Exports of Small Scale Industry in total Exports during 1978-79 and 1982-83

Year	Total value of exports (Rs. in crores)	Value of SSI products of traditional items (Rs. in crores)	Value of SSI products of non-traditional items (Rs. in crores)	Total value of exports (Rs. in crores)	Share of exports of SSI Products
1978-79	5,726.26	152.24 (14.9%)	910.00 (85.1%)	1,069.24	18.7
1979-80	6,458.76	177.86 (14.5%)	1,048.44 (85.5%)	1,226.3	19.0
1980-81	6,710.71	156.2 (9.5%)	1,487.00 (90.5%)	1,643.2	24.5
1981-82	7,796.95	188.1 (9.1%)	1,881.57 (90.9%)	2,069.67	26.5
1982-83	8,834.15	150.09 (7.2)%	1,943.53 (92.8%)	2,093.67	23.7

Source : Development Commissioner, Small Scale Industries.

finance, as finance is considered to be the cause and effect of several problems in most of the cases. Thus the problem of finance is vitally related to the problems of production, technical and managerial competence and marketing. Non-availability of timely finance has been the root cause of the above problems. Despite the efforts made to promote this sector, the sector is not able to meet the expectations of many, the financial problems hampering the working and further growth of this sector. Therefore, all those concerned with the growth and working of small scale industry should focus their attention to solving the problems of small scale industry. In this context they can consider the establishment of an apex body at national level i.e., Small Industrial Development Bank (SIDB) to look after the financial needs of small scale sector. on the similar lines of IDBI for the Industrial sector and NABARD for agricultural sector This proposed SIDB, could, monitor and guide the various financing agencies of small scale sector such as SFC's, Commercial banks etc □□□

(continued from page 17)

per se may not, in our situation, produce any significant or lasting changes in the cropping pattern

On the question that the fixation of procurement and support should take into account the changes in terms of trade between agricultural and non-agricultural sectors, the paper noted that the revised terms of reference of the Commission for Agricultural Costs and Prices clearly provide for it. However, the criterion of the terms of trade has to be read together with the criterion of introduction of technology and justice to the customers, particularly those belonging to the vulnerable sections of the population. When technology is applied and productivity goes up, the unit cost of production comes down, even though the total cost of cultivation per hectare may have increased The entire gain reaped through the application of technology and reduction in unit cost of production should be shared equitably between the producer and the consumer.

Subsidies

There is a reference in the paper to the dilemma faced by the government in trying to grapple with the problem of growing expenditure on agriculture subsidies. Both fertiliser subsidy and price support operations are needed as complementary instrument on the twin policy of promoting productivity and holding the price line. All the same, if subsidies continue to grow at the present rate, they will be at the expense of developmental expenditure. Alternatively, they may lead to higher budgetary deficits which in turn will offset costs and prices. There is therefore a need to contain subsidies within reasonable limits.

Incentives

Emphasising the need for boosting exports, the policy paper says it is desirable to pay attractive prices for commodities with the export potential It is equally important to pay appropriate incentives to farm produce of higher grade quality, since quality is important in the export market.

A major announcement in the paper is the assurance that procurement and support prices will be announced well in time before the sowing season to enable the farmer to take profitable decisions. It is essential for the farmers to know about the agricultural price policy before the crop season starts, so that he can take his decisions accordingly. The announcement of support prices before the sowing season is a long standing demand and the new policy has taken note of that demand in working out a time schedule for the fixation of support prices of various crop.

It is hoped the new long term price policy spelt out by the government would give a further fillip to our agricultural development.□□□

(Courtesy : All India Radio)

Protecting consumers' interest

K. P. Sastry

The need for consumer protection is now being felt more than ever before. Among the myriad products in the market consumer is today nursing a feeling of helplessness,- because he feels he is being systematically victimised as regards quality, price of products and services available. The author here lists some important laws which, he says, can go a long way in protecting consumer interests.

CONSUMER IS THE FOCAL POINT of all the activities. In fact he is the very basis which supports superstructure of all operations in the society. Consumer interest therefore should receive first priority of all. But to-day the consumer is nursing a feeling of helplessness. He feels that he is being systematically victimised in regard to quality, price of products and services available to him practically in every respect.

As a citizen, as a taxpayer and as a buyer, the consumer should have the right to expect that he will get the right type of goods of the right quality at the right time and at the right price. In practice, it is well known that the consumer is the most ignored, the most harassed, the most suffering but most docile citizen. The consumer's plight with regard to availability of items like kerosine, sugar and cooking gas is so pitiable that he has resigned himself to his "fate and classified himself as the unimportant person." On the other hand, there is the oft repeated statement that "customer is always right" and the customer is the "KING". On the other hand, the legal position of a buyer has been expressed in the famous expression "caveat emptor" or "Let the buyer beware."

Why consumer protection ?

While the profit in any business is not a crime and it is essential for survival and growth, illegal profit or profiteering through questionable means like product adulteration, fraud, inflationary price practices like hoarding, speculation, black-marketing and so on are considered both anti-social and anti-national.

The list of instances and kinds of exploltation through malpractices adopted by business men is a very long one. We may mention some of them to indicate the gravity of consumer exploitation so as to prove the dire need of consumer protection and education.

1. Lack of safety regulation; 2. Food adulteration 3. Short weights and measures; 4. Misuse of coloring matter; 5. Limitation of manufacture; 6. Blatant misleading advertisement; 7. Conspicuous consumption; 8. Hire purchase plans; 9. Advertisement tactics; 10. Sales Gimmicks; 11. Evil practices of powerful multinationals; 12. Massive profiteering 13 Illegal trading etc

The above types of malpractices and the consequent exploitation of consumer interest on a large scale will certainly indicate the pressing and urgent

need for consumer protection and consumer guidance in India. We find that consumer is a very unimportant person in the market.

Consumer protection may be viewed from three angles. One is the physical protection of the consummer.....measures to protect consumers against products that are unsafe and endanger health. A second aspect is the protection of the consumers economic interest.... measures to protect him against deceptive and other unfair trade practices and to provide adequate rights and means of redress. A third and equally important aspect is the protection of public interest against the abuse of the monopoly position and restrictive trade practices.

How to protect consumers

Consumers can be protected by :—

1. Self help, 2. Legislative action by Government; 3. Business, trade and industries' following fair trade practices and 4. giving a fair deal to the dealer|retailer.

Self regulation by business will minimise the need for extensive government intervention. The market profession can regulate its own behaviour and actions by self discipline and by raising ethical standards Business community must read the writing on the walls and take without delay, appropriate steps to regulate its conduct and cultivate self discipline and self regulation in the larger national interests. Let it be noted that this is not merely for protecting the consumer interest but also protect the self interest of the business community itself. Enduring and positive improvements in business practices can be brought about by the businessmen themselves and these changes should be based on the inner will or desire rather than from the external force or discipline. Many trade associations have moved positively to respond to growing consumer satisfaction. This response was due to the increasing threat of government regulation. Purely voluntary efforts of self regulation by industry or trade are not likely to be successful, because there are no sanctions in the form of some enforcement machinery. Moral sanction and moral responsibility or obligation may not be powerful for enforcement if all the members of the trade association do not have a higher sense of discipline, and suitable temparament, selfregulation, self control etc.,

Chamber of commerce and trade associations can play an effective role in self regulation Consumer protection is not their normal expected function. Hence a new set of association have to be set up on behalf of trade to offer consumer guidance, consumer education and consumer protection In India we have such an organisation called Fair Trade Practices Association for enforcing a mode of conduct in fair trading. Complaint handling machinery may be entrusted to special institutions such as MRTPC. Such special bodies can also evolve a code of conduct for fair trade practices—a form of self regulation.

In the past marketing legislation was by and large business oriented not consumer oriented. Statutory regulation is the crudest form as well as last resort to secure a disciplined business conduct. Legislation gives statutory protection to innocent and ill informed consumers against unfair trade practices For honest people self regulation works well and legislation is superfluous.

We have at present a series of legislation now consumer oriented. The consumer legislation recognises consumers bill of rights and tries to protect those basic rights of consumer in the market place. Legislation also enables the consumer's rights to represent their interest in all regulatory government agencies.

Failure of business to adopt marketing strategies from consumer view point and develop consumer oriented marketing concept is really responsible for the growth of consumerism and consequent legislation to provide consumer protection.

Consumers are ignorant of their legal rights and even where they are made aware of the same they are either unable or unwilling to pursue them. With parochial and regional interests predominating over national ones, divided by a multiplicity of languages, customs and traditions with mass illiteracy offering a solid obstacle to rapid progress to consumer education, any attempt to quicken the pace of the consumer movements is bound to be difficult.

The consumer himself was illiterate and ignorant and had hardly any bargaining power. He was of course not organised and was not in the least conscious of his rights. He was therefore exploited in a number of ways.

The basic aims of consumer protection laws have been summarised below :

1. prescription of standards of goods and services to be provided to consumers.
2. prohibition of regulation of undesirable practices.
3. prescription of terms to be implied into contracts made with consumers.
4. establishment of bodies to receive complaints from consumers, to investigate these complaints and to take action.
5. establishment of machinery to promote the education of consumers.
6. licensing and on-going regulation of the types of persons who may be permitted to supply certain types of goods and services to consumers.

In India a number of laws have been enacted in the field of consumer protection legislation relating to standardisation, grading, packaging and branding, prevention of unfair trade practices, food adulteration and the like. However, the laws do not seem to have kept pace with some of the sophisticated trade practices in respect of which consumers do need protection as will be obvious on a comparision with the British Laws in the same area. An attempt has been made to list out some of the most important pieces of Legislation in the following paragraphs.

Consumer Production Laws

Fruit Products Order, 1946 (as amended in 1955)

We have compulsory licensing of manufacturers of fruit and vegetable products to ensure minimum standards in respect of quality, packing, labelling and marketing and for sanitary conditions in the factories Periodic inspection and testing of samples ensure quality control of fruit and vegetable products.

I.S.I. Certification Marks Act, 1952

In India any product manufactured as per standards laid down by the Indian Standards Institution may be certified under the I. S. I .(certification marks) Act 1952. The ISI mark of a particular design and including the references number of the standard constitutes the symbol of certification assuring the buyer that the marked articles satisfied the recognised quality standards. The ISI certified goods are subjected to quality control checks and tests. They are produced as per the Indian Standards or specifications and find ready acceptance in all markets. They are the best safeguards against impure, bogus and substandard commodities. The ISI Marks of certification is more than a claim by the manufacturer. The ISI was established in 1947. During the 39 years it has formulated a number of standards for foodstuffs, textiles, sport, goods, cookers, etc.

The Agricultural produce (Grading) Marking Act, 1937

Under this act, the Government has set up grading stations for commodities like ghee, eggs, flour etc. The graded goods are stamped with the official seal of the agricultural marketing department—AGMARK goods enjoy a wider market and naturally secure better prices due to purity and quality. We have a central quality control laboratory at Nagpur and ten regional laboratories in different parts of the country for the purpose of testing quality and purity of agricultural products applying for the Government AGMARK.

Central Packaged commodities (Regulation) Order 1975

The primary objective is to apprise the consumer of the contents, weights, price, month of manufacture and the name of manufacturers of several packaged commodities for retail sale.

Essential Commodities Act 1955

It governs the production, procurement and distribution of all essential commodities. This act has been amended in 1974 to ensure quicker and more effective action against the anti-social activities of profiteers, hoarders and black marketeers. The administration enforced orders relating to display of prices and stocks by dealers in essential goods and items of mass consumption.

MRTP Act, (1969 Monopolies and Restrictive Trade Practices Act, 1969).

Under the MRTP Act 1969 an enquiry into restrictive and unfair trade practices can be made by the MRTP Commission upon receiving a complaint from any trade or consumer association having a membership of 25 or more members. This is a valuable right which the consumers can exercise with a view to removing artificial shortages, effects of misleading advertisements, manipulated high prices of essential Commodities.

The Drugs and Magic Remedies Act, 1954

This act prohibits advertisements of drugs for certain diseases like blindness, heart diseases, paralyses, epilipsy and sexual impotency. Publication of advertisement of drugs for some disorders is prohibited. The Act also prohibits advertisements of magic remedies like talisman, mantra, kavacha and charms for prevention of mitigation treatment, or cure of diseases.

The Prevention of Food Adulteration Act, 1954 protects the consumer from hazards of food adulteration.

The Dangerous Drugs Act, 1930 controls misuse of habit forming drugs like morphine and opium. Interstate movement of narcotic drugs is also regulated.

The Drugs and Cosmetics Act, 1940 seeks to control the quality of drugs and cosmetics. It is obligatory under the Act to obtain a licence to manufacture or sell any of the articles mentioned and to do so without a licence is an offence.

The Emblems and Names (Prevention of Improper Use) Act, 1950 : seeks to prevent improper use of certain emblems and names such as National Flag, Ashok Chakra, etc. for professional and commercial purposes. These provisions will also help to avoid deceiving the gullible public.

The Drugs Control Act 1950 empowers government to control the sale, supply and distribution of drugs and fix the maximum price which may be charged for drugs and the maximum quantity which a person may possess and direct the marking of prices thereon.

Section 19 and 73 of the Indian Contract Act, 1872 deal with the buyers rights to avoid agreements made without free consent and to compensation for the loss and damage caused by breach of contract.

(*Continued on page* 31)

Enabling the disabled to stand on their feet

Dr. A. Mariaraj

The article is a study on human resource development with particular reference to the disabled in the State of Tamil Nadu. The author analyses the activities of the various voluntary organisations imparting education, guidance and training to the disabled thus ensuring their rehabilitation and integration in the mainstream of national life. No country, says the author, can have economic and social progress without human development and it is in this context that the rehabilitation of the disabled gains importance.

ACCELERATION OF ECONOMIC DEVELOPMENT is an avowed policy of any government especially in developing countries. Economic development is the outcome of the productive factors that are put into the process of production. Higher the utilisation of these factors, higher will be the attainment of economic development in a country. Of the various factors of production, labour factor is human, productive and reckoned with the Labour Theory of Value. The human population of a country constitute the size of labour force. The developing countries are characterised by over-population and labour-surplus economy. The biggest single resource of our country is also overwhelmingly human. India may, be poor in material and capital resources. But she has vast human resources whose capacities can be utilised to the fullest extent possible to alleviate scarcity, unemployment and other deficiencies. Any Government which is interested in economic growth would also be interested in human development as a component of economic development and growth. Without human resources development, one cannot assume economic and social progress in a country. Dr Mahlee has rightly remarked in this context that, "once more you hear everywhere people speaking about nuclear energy, oil energy, solar energy, wind energy and everybody seems to be overlooking the fact that without human energy there would be no kind of progress either socially or economically. Human resources development, therefore, becomes imperative in the context of economic development.

Importance of human development

Human resources development means optimum utilisation of existing human capabilities-intellectual, technological, entrepreneurial and even moral and creation of new ones. Human resources development should be a main programme of the government so that the poor, the economically weak, the hapless and helpless lots in the society and the disabled persons can contribute their mite to the national income. It should be borne in mind that such a programme is not at all a welfare or charity programme. It should be designed as a full-fledged strategy to achieve the goals of economic planning of a country. In spite of the considerable success achieved in the major sectors of our economy, thanks to the implementation of Five Year Plans in our country, it is admitted that

human resources development has not received due attention. It has been positively consented by our Prime Minister, Mr. Rajiv Gandhi when he stated that, "We have been working furiously at economic development. Unfortunately, we have not paid enough attention to human development and I feel that it is very much an important part'.. Having realised the imperative need for human resources development, our Prime Minister has rechristened the erstwhile Ministry of Education as the "Ministry of Human Resources Development'.

Disabled too human beings

In the Indian way of thinking, a human being is seen as a positive asset and a precise natural resource from the womb to the tomb. But this holds good only in the abled, efficient and sighted persons who are capable of being employed. At the same time, we forget to remember our fellow-brothers who are destined to be born either as a blind or a deaf or orthopaedically handicapped or mentally retarded. Some of us are born with a handicap and some others acquire a handicap as a result of illness or accident or old age. The disabled are often hampered by society's phobias. But the society owes a responsibility to the physically handicapped and mentally retarded for their rehabilitation and integration in the mainstream of life as someone put it, "the greatest good you can do for another is not just to share you riches but to reveal to him his own "

In this context, it is attempted to focus attention on rehabilitation and employment creation for the disabled persons in the country. Rehabilitation is the process of restoring the handicapped person to his fullest normalcy, ability and usefulness. He is guided to develop his dormant abilities and to integrate in the mainstream of the country. World Health Organisation defined rehabilitation as follows : "By rehabilitation is meant the physical and mental restoration as far as possible. of all treated patients to normal activity so that they may be able to resume their place in the home, society and industry". In the light of the definition of rehabilitation of the disabled, the idea of human resources development or manpower planning in the case of the disabled is revealed in the right perspective.

Scope

The scope of this paper is limited to the study of the human resources development in the disabled persons. Due to the constraints of non-availability of time, finance and required data, the study is confined to the important organisations rendering rehabilitation services and employment generation activities to the disabled in the state of Tamilnadu. It is, therefore, a study based on random sampling method. But this is indeed a different approach to the study of human resources development and has not been touched and developed by many. In this respect, it is an interesting, illustrative and informative one that draws the attention of everyone.

Need for rehabilitation

The best estimates suggest that about one out c ten of the world's people is born or acquire a dis ability. This number is increasing annually throug population growth. Eighty per cent of the disable people live in developing countries. The NSS c India has declared that the population of handicap ped in India is 12 mn. The high incidence of di ability in developing countries imposes economic an social burdens upon society as a whole. The legiti mate desires and ambitions of the handicapped pe sons with regard to obtaining education and holdin a job are not respected. Due to social changes i the modern days, the extended family system is bein abandoned in our country and most adults are force to leave home for work. As a result, the member of the family as well as the relatives of the disable persons often do not feel that it is their obligation t look after their disabled persons at home. This con dition warrants the social and general obligation t project the problems of the handicapped as well a to the rehabilitate them with a view to convertin them into productive social beings. With this spiri the UNO declared Human Rights and the Rights o the Disabled Persons and the year 1981 was dec lared International Year of the Disabled.

Assistance

The disabled have received attention in the post independence era in our country The shift fron charity to rehabilitation began in the First Five Yea Plan of our country The state governments do shar the direct responsibility for imparting and executin the programmes for the handicapped Yet voluntar organisations share the bulk of the workload for th disabled in the country As a matter of fact, huma resources development is the very life of constructiv work of voluntary agencies Most of the voluntar agencies provide specialised form of services in th areas of education, employment and vocational train ing to the disabled in Tamilnadu. Thus a great scop has been created for organising courses to assist dis abled persons in their personal development as pre paration for mainstreaming".

Voluntary organisation

The Government of Tamilnadu has establishe Government "Institute of Rehabilitation, Medicin at K K Nagar, Madras" The centre provides comp rehensive rehabilitation services for locomotor handi capped persons in various types of agricultural acti vities. The main function of this institute is to fin out how best a handicapped person would be suite to a particular job. This is done by administering series of tests regarding the person's ability, dexterit and adaptability for the job On the basis of jo evaluation of the handicapped, training is imparted i carpentary, tailoring, composing and printing. Th handicapped trainees are employed from within an

outside the institute and as they are conferred a certificate of merit in the concerned trade.

Life help centre

Another organisation which is solely dedicated for the welfare of the physically handicapped and mentally retarded children is "Life Help Centre for the Handicapped" which is situated at Palawkkam, Madras. Highly, impressive and profit-making crafts are imparted to the physically handicapped at this centre. Then they are employed in the sheltered workshops comprising soap-making, leather-goods-making, and power laundry units. They also manufacture calipers and crutches and attend to repair of the same. On the same lines, another institute by name "Ishwari Prasad Dattareya Orthopaedic Centre, Andhra Mahila Sabha, Adyar, Madras" is rendering wonderful rehabilitation services and vocational training to the orthopaedically handicapped girls and boys above 16 years of age. They are engaged in printing and tailoring.

The Red cross

It was in 1963 the Swedish Red Cross established an Engineering Rehabilitation Workshop for the orthopaedically handicapped in Tamilnadu. It is now called WORTH (Workshop for Rehabilitation and Training of the Handicapped). The head office of Worth Trust is at Katpadi near Vellore in North Arcot of Tamilnadu. Its branches are situated at Tiruchirapalli, Chingleput, Madras and Pondicherry. The present avenues open to the disabled at WORTH Centre are many and marvellous. WORTH at Katpadi imparts intensive training to the orthopaedically handicapped persons and facilitates placement of trainees in regular industrial vacancies. The Government of India has recognised it under the National Vocational Training Programme. This centre imparts training to the turners and mechanist traders It also provides non-formal training in the fitting, milling and turning trades. WORTH at Tiruchira palli produces machines and fabricated components for the electrical, cement, steel and textile industries. Oil extraction machines, bio-gas plants, windmill pumps and tractor-trailer are also manufactured, here All these manufacturers are undertaken by the physically handicapped men and women and a few mentally retarded persons. Having succeeded in industrial rehabilitation, the Worth Trust at Tiruchirapalli turned its attention towards agriculture and dairying in which considerable success has been achieved

One of the largest groups of the handicapped who opt for the job is the blind. In India, it would be right to say that there is a hesitant attitude and apathy on the part of employers and the general public This is partly based on a traditional view of the blind who are regarded as completely dependent and incapable and partly due to an abundance of skilled and semi-skilled sighted workers. Unions and sighted workers are sceptical but not antagonistic. The same view was expressed by our beloved Mrs. Indira Gandhi when she said that "there seems to be a deep-rooted and mis-conceived belief prevalent that the blind cannot be put to any useful work in office and factories, and should find place only in charitable homes. Such notions need to be firmly dispelled.

The new thinking in the rehabilitation of the visually handicapped (blind) adults is that they need not be isolated from the society but can well be integrated in it. When the existing skills of these handicapped are matched with the skills and job content of normal people, sometimes they might excel the latter. And, therefore, a good number of organisations are rendering suitable rehabilitation services to the blind. The Government of Tamilnadu has established a "Pilot Demonstration Rehabilitation Centre for the blind" at Madurai. The Centre is running a workshop for the blind with weaving, tailoring and cane work sections. There are 52 trained blind employed in the workshop. In the same place of Madurai, the Helen Keller Service Society for the Blind, a voluntary organisation has been catering commendable service to the blind in terms of vocational training, day-to-day living skills, mobility training, recreations and integrating the blind with the family and community. Under self-employment scheme, the society has arranged petty shops, raw mat-weaving, cloth-washing, lamb-rearing and matchwork.

The blind hailing mostly from Tamilnadu particularly from the districts of Coimbatore. Periyar, the Nilgiris and Salem are offered rehabilitation services by the Rehabilitation Centre for the Adult Blindmen at Podanur, Coimbatore. The centre offers the following vocational training to the visually handicapped :

(i) envelopmaking, (ii) Chair knitting, (iii) agarpathi making, (iv) semi-engineering trades, (v) Korai mat weaving, (vi) handloom, (vii) tailoring, (viii) radio assembling, (ix) carpentary, (x) automobile repair, (xi) lorry body building and (xii) chalk piece making.

The total duration of the training is ten months in case of physically handicapped and sighted and two years in case of visually handicapped

Rural scheme for blind

Dr. Joseph's Eye Hospital in Tiruchirapalli is running a Rehabilitation Home for the blind. It caters to the age group of 18-35. It gives training in various crafts like weaving tailoring, mat weaving umbrella assembly, soap-making etc About 50 blind men receive training annually here. The management of the above hospital with the financial assistance of Christoffel Blinden Mission, West Germany is implementing a Rural Scheme for Rehabilitation for the Blind

This programme was initially started at only one taluk viz, Musiri taluk of Tiruchirapalli District. It has now been extended to Thuraiyur, Kulithalai, Manapparai and Karur Taluks of Tiruchirapalli District. So far 307,596 people were surveyed, of which 946 incurable blind had been identified, 295 rehabilitated and 93 given training and the rest are waiting to join the training programme Another organisation called "Bishop Diehl Rehabilitation Home for the Blind at Tiruchirapalli" is yet another centre performing wonderful service and man-power planning for the blind. It is imparting constructive training in crafts, providing rehabilitation services to the neglected blind hailing from the poorest villages of Tamil nadu. This centre provides assistance and human cars for 60 adult blind men The blind get essential vocational training according to their skill and aptitude. For example, a blind man who has knowledge of weaving when he enters the institution is given intensive training in reeling, spinning, warping and weaving. And then he becomes a wage-earner. Thus a trainee leaves this centre only when he is capable of living independently

ORBIT

There is yet another voluntary organisation called "Organisation for Rehabilitation of the Blind in Tiruchirapalli (ORBIT) which was started not as a training institute but as a Commercial Organisation for the blind. At present it employs 62 blind persons and 3 orthopaedically handicapped and they manufacture light engineering products. To the best of our knowledge, this is the only organisation established for the handicapped in India which is registered under the Factories Act and giving benefits of provident fund etc to its workers

Among the blind, at least one third are adult blind women They are considered to be dead weight of the families. Therefore, the Rehabilitation Centre for the Blind women at Tiruchirapalli has become the beacon light of hope and courage to all blind women in Tamilnadu. The process of rehabilitation here consists of both independent living and vocational training. The vocational training imparted to the blind women are, matweaving, tailoring, beedi-making, envelop making, chalk-piece making, recanning and weaving

To conclude, we can state that it is very difficult to visualise the magnitude of the challenge arising out of rehabilitating the disabled in our country in the Process of human resource development Yet it is heartening to note that there has been considerable increase in our country in identifying the handicapped and unearthing their talents through vocational training and thereby making their lives worthliving In this effort, the services of the voluntary organisations in Tamilnadu deserve appreciation and admiration

Squint : Is it blinding ?

Dr. Prem Prakash

Man, like other vertebrates, is bestowed with a binocular vision which imparts the third dimension—that of depth—to his vision. However, the persons suffering from squint are deprived of this third dimension and consequently they have only a uniocular vision. Thus squint in a way amounts to blinding of one of the eyes at any given time. This, obviously, has its social and economical repercussions too! In this article the author analyses the various causes, signs and symptoms, and the types of squint generally encountered. He says visual impairment caused by squint can mostly be prevented if early adequate measures are undertaken. He, therefore, emphasises the need of getting squint treated at the earliest possible age, for no age is too young for its treatment.

SQUINT is a well-known eye problem and is often considered only a cosmetic blemish. It is hardly realised that due to squint often one of the eyes may lose its vision (i.e., becomes amblyopic) Even a few cases of squint, which maintain good vision in each eye, are for all practical purposes one-eyed as the squinting eye is unable to function when the other eye is seeing. Thus the person is deprived of binocular vision (i.e , single vision achieved by the coordination of the two eyes) which is so essential for perception of the third dimention (i.e., depth perception or stereopsis). This realization would bring out the answer to the question posed.. ... .Is squint blinding ? The answer is 'Yes', if one considers it in terms of one-eye blindness

It is unfortunate that squint affects by and large children who are ignorant about the malady and are too young to recognise it or complain about it. These unfortunate children, due to lack of proper and timely detection and remedial measures, grow up to face an unfortunate rejection at the time of entry into various vocational and employment opportunities because of their visual handicap due to squint.

Prevalence

It is estimated that 1 to 2 per cent of population suffers from amblyopia (poor vision due to squint or allied disorders) and about 4 per cent of population suffers from muscle imbalance manifest in latent squint). About 20 per cent of total eye patients reporting at AIIMS are catered by the orthoptic section of Dr. Rajendra Prasad Centre (Orthoptic section deals with squint and allied disorders). "That this enormous number of people suffer from a serious visual and cosmetic defect is a grave economic and social matter and that it should be tolerated with complacency is a depressing reflection of the neglect shown towards this unfortunate population" (Duke-Elder). By and large efforts so far have been directed towards control of blindness due to infection, injury, malnutri-

tion and cataract. However, prevention and control of blindness have to be considered with a broader perspective which should include the present visual handicap also.

Development of vision

Before we deal with the subject of visual defect due to squint it would be worthwhile to know the development of vision (uniocular and binocular), which has a great bearing in understanding the problem of squint and associated visual defects.

Both the eyes in a newly born child have very poorly developed vision and have little coordination between them. However, in due course anatomical (structural) development takes place and the child's full vision is developed—provided there is an availability of proper and adequate inputs of visual stimuli.

Simultaneously the two eyes start coordinating with each other to perceive (two) images of outside world through each eye as one, i.e., they develop fusion (i.e., single binocular vision alongwith stereopsis). This development is completed by about 5 years of age and becomes stable and mature by about 8 years of age It may be noted that both eyes do not perceive exactly the similar type of image but have some degree of disparity in the quality of image received by either eye and the fusion of these images gives rise to a sense of depth (Three dimensional view).

Common causes

1. Abnormal structure resulting in defective movement mechanism (muscles, ligaments, nerves, etc.)

2. Due to unequal or inadequate development of vision in each eye due to :

   (i) Refractive error (need of glasses).

   (ii) Any other hinderance in the formation of proper image in the eye.

   (iii) Any defect in transmitting the image to the brain

   (iv) Excessive stress on 'accomodation'

3 Lack of fusion.

Defective vision in squint

1. **Presence of squint itself :** Due to squint the two images from the eyes cannot be fused resulting in double vision which is not an acceptable situation. In children it is possible to ignore image of the squinting eye (by mechanism of suppression at the level of brain) resulting in comfortable single vision but at the cost of the vision of the squinting eye

2. **Unequal size of images :** Often the formation of images in two eyes is not of equal size (commonly seen in unequal number of glasses in two eyes) and the individual is unable to fuse the two unequal images resulting in double vision. The worse image is suppressed by brain to attain comfortable single vision.

3. **Uncorrected refractive errors :**

If refractive errors (i.e., need of glasses) are not corrected adequately in children it can result in amblyopia (poor vision), i.e., non-wearing of glasses when needed is responsible for poor vision.

4. **Inedequate visual inputs in the eyes:**

Any cause hindering the formation of proper image inside the eye, e.g., ptosis, cataract, corneal opacity, etc. during childhood results in amblyopia (poor vision) along with squint.

Signs and symptoms

1. Obvious Squint.
2. Defective vision.
3. Eye strain.
4. Diplopia (double vision).
5. Headache.
6. Running of printed lines or words into or away from each other.
7. Adoption of particular head posture
8. Inability of moving the eyes.
9. Sometimes nausea, vomiting and vertigo.
10. Lack of adjustment of distance|location of objects.

Types of squint

1. **Latent squint :**

This type of squint is not noted by the patient or any other person but can only be detected by the doctor. The patient usually complains of eye strain, headache, occasional diplopia, watering or difficulty in reading, etc. Such patients can break into manifest squint under stressful conditions or whenever there is a prolonged usage of one eye

2. **Concommitant squint :**

These squints manifest themselves during early childhood. Squint may manifest in one or in both eyes alternately. In cases they alternate they do not have any defect in the vision of any eye but have no binocular vision, i.e., two eyes do not coordinate with each other and thus when one eye sees the other eye does not perceive vision. In such a situation the individual is practically one-eyed. In case the squint is confined to one eye only, then the affected eye becomes amblyopic

3. **Accomodative squint :**

This is a type of squint in which the squint is present because of poor vision in the eyes due to hypermetropia, i.e., this squint occurs in far-sighted children To overcome this visual inability the child puts

in an extra effort to see clearly by employing excessive amount of 'accomodation' (a mechanism by which the far-sighted can overcome the visual defect' accom panied by excessive convergence resulting in squint.

4. Paralytic Squint :

This is a type of squint in which there is a defect in the movement of the eyes. This defect may be either due to under-development/maldevelopment of muscles, ligaments, etc., or due to the paralysis of certain nerves which may be either congenital or acquired and may sometime be an indication of certain brain diseases.

5. Pseudo squints :

Often there is an appearance of squint without any squint present in reality. It is quite common in infants. It may also be noted, on the other hand, that the degree of squint may be very small (small angle squint) which is not discernible to a layman and has no cosmetic problem but does result in impairing the vision of the affected eye

Management

1. Prevention

It needs to be emphasized that the visual impairment caused by the squint can mostly be prevented if early adequate measures are undertaken to remove the causes resulting in squint or by timely correction of squint itself.

2. Treatment :

The squint must be treated at the earliest possible age. There is a wrong notion amongst the public, and unfortunately even amongst some general practitioners of medicine, that one should wait for its cure as many a time it may disappear by itself with passage of time. This is not at all correct and must be strongly dispelled. The squint must be detected and managed at the earliest possible age. All the problems of squint with regard to the impairment of uniocular or binocular vision takes place during the plastic period of visual development, i.e., before 5 to 6 years of age and preventive-curative measures must be undertaken before that age. It is all the more important for functional cure of squint. However, it is equally important even for cosmetic reasons. If the squint is treated late, one may be able to give a cosmetic improvement to the patient but it will not be possible to improve the vision. Even in terms of cosmetic cure, it is advisable to get it corrected early or else the child becomes victim of the ridicule of his friends which may pose a personality development problem

The treatment may require use of glasses (which is very common). This treatment may either totally cure the squint or may partially relieve it. However, there should not be any objection to the usage of glasses in young children and even in infancy. The other measures often employed are

(i) Drugs (often in infants).

(ii) Patching of one eye (to improve the vision of the affected eye)

(iii) Pleoptics and orthoptics (certain exercises to improve the vision by coordination between the two eyes).

(iv) Surgery to correct the squint. It may be undertaken in the affected eye or even in the other eye or in both.

Finally, I would like to emphasize that squint management gives best results when undertaken at its earliest manifestation. No age is too young for its management. □ □ □

(*Continued from page* 24)

The Indian Penal Code, 1860 does provide for consumer protection by way of punishment to offenders in certain cases. For example sections 264 to 267 relate to adulteration of food, drinks and drugs. However most of the above mentioned offences are non-cognisable/bailable under the code of Criminal Procedure 1973.

Sections 14 to 16 of the Indian Sale of goods Act, 1930 deal with implied warranties and conditions as to title quality, or fitness of goods and set out the exceptions to the maxim "Caveat Emptor".

The prevention of Blackmarketing and Maintenance of supplies of Essential Commodities Act, 1980 provides for detention of any person with a view to prevention of blackmarketing and maintenance of supplies of commodities essential to the community.

Needless to say that in addition to all the above provisions, the consumer has the right, as a citizen, to invoke the provisions of Articles 32 and 226 of the Constitution of India to approach the Supreme Court or the High Court by filing Writ Petitions. Further, the Articles 39 (b) and (c) direct the State to secure that the ownership and control of the material resources of the community are so distributed as best to subserve the common good and that the operation of the economic system does not result in the concentration of wealth and the means of production to the common detriment.

These measures were well intentioned and have certainly been of help to the consumer. However, the fact remains that the consumer continues to suffer from many disadvantages and disabilities and in some respects he is worse off today than what he was before. To a certain extent this is the fault of the consumer himself, who unlike other interest groups has failed to organise himself or even develop a consciousness of his problems and rights. The consumer-co-operatives movement has been especially weak and ineffective

These reforms will not fall from the heavens. Nor would the government bears them about unless it is subjected to a strong and steady pressure. Only a strong consumer movement would be able to exercise such pressure and get for the consumer the protection and consideration which is rightfully due to him □ □ □

Book Review

Gandhian Economics

Gandhian Economic System—A necessity or Utopia, by Radhey Mohan; Publisher : Vichar, 61 Daryaganj, New Delhi, pp. 156; Price : Rs. 70.

If one were to summarize Gandhian Economic System in one sentence, it could be summarised as the integrated development of man by man. Unfortunately, this has not been adhered to by any of the systems developed by man be it capitalism or communism. Both the systems failed miserably as regards man's all round development. Here comes the importance of Mahatma and his system for which he so assiduously worked till his last breath. How and why his system has gained prominence today is very brilliantly brought out by the four eminent personalities in this nicely edited book. Though the basic tenets of Gandhian economics remain the same in all the four chapters that comprise this book, their tone varies with a little change in degree of emphasis on each

The stage, however, has been set by the editor himself by laying the ground work for a more strong edifice. His theme is that the post-industrial society and its affluence have failed to deliver goods which mankind aspired for. Not only that it has created a tense global environment charged with conflicts and violence. He provoked the reader to delve more deeply into the chapter that follow to find out what answer Gandhian system provides for the above

Gandhiji, as is well-known, was not an economist nor did he study economics at any stage of his academic life. However, he wrote extensively on India's economic problems in "Young India" and "Harijan". He had a fairly good knowledge about India and its teeming millions India, in his view, lived in villages. Therefore, we should first take care of our villages. Shriman Narayan has given a very balanced view, laying due emphasis on each of the Gandhian tenets, in the first chapter of the book. Starting with Gandhian philosophy of curtailing wants in order to achieve the ultimate happiness, he raises a very pertinent question of unemployment, the solution for which India has not been able to find out even after 38 years of planning The solution, Gandhiji felt, lay in the rural reconstruction based on promotion of Khadi and Cottage industries The author who has travelled far and wide, the experience of which he narrates at many places in his lecture, comes to the conclusion that all economic ills which India today faces, for example, problem of rural-urban migration, growing violence, regional imbalance inequalities in income etc. etc., find favo in Gandhian Economic Thought. He has dealt wi each one of them at considerable length in his le ture within the Gandhian framework.

Pyarelal in the second chapter deals with problei from a rural orientation. He gives out the salie features of Gandhi's system of planning for tl regeneration of India's villages "Urbanisation", l says, "of the village is not rural reconstruction b destruction of the values for which rural life stands Also, he calls for peoples' participation in nation economic planning

VKRV Rao deals the subject of Gandhian thoug as a comparative study of Marxist-Leninist theor He brings out Gandhian concept of trusteeship ar Sarvodaya as an answer to Marxist-Leninist phil sophy of change in the private ownership of mea of production. He lays emphasis on Gandhian alte native that it is not the class struggle but class c operation which would bridge the gap between tl rich and poor. At the end, however, he asks a seri of questions regarding the practicability of the idea c trusteeship and he leaves it for the reader to fi out answers for them

V M Dandekar while interpreting Gandhia Economic Thought gives more of evidences. One fin a number of quotations from Gandhi's own speech which he made at several places and in writings H gives these quotations to prove his point that Gandhi was well aware of the shortcomings in his type c economic planning. He does not agree with Gandhian solution to the present day problems which India is facing They require a different treatment. altogether outside of Gandhian framework

The articles in the book carry view points of persons having different approach to the interpretation of Gandhian thought The reader would find them outside of Gandhian framework

Aditya Kumar Trivedi

Fascinating Discovery

DISCOVERY OF INDIRA GANDHI : A Select Chronology by S. K. Dhawan, Published by Wave Publications, 721, Mukherjee Nagar, Delhi-110009 First published in 1986, Pages 429. Price Rs. 300 00

Scholars of contemporary history, and researchers of the thoughts of great men and women of international repute, in order to have a deep understanding of the undercurrents of times would be certainly benefited by this book The planned arrangement of information in a chronological order unfolds a panorama of important events The speeches and writings of our great leader Indira Gandhi would, in days to come, be declared a monumental epic that would go

invigorating and illuminating the lives of many ning generations all over the world, particularly India.

The book provides in detail, the sequences of events it followed in her life till her death on October , 1984. Chapters dealing with the posthumously 'arded honours (November 14, 1984) are of great ;nificance There is also a description of the sixty-ghth birth anniversary falling on November 19, '85 and the celebrations that took place in the untry. The chapter on 'Homage and Tributes' on e death of this giant amongst the world leaders akes a thrilling reading "Indira Gandhi did not :long to India alone but to the entire suffering imanity Her voice was the voice of the hungry, ie weak, the anguished, the maimed and the disabled," :clared Indian Parliament in the resolution condol-g her death." "Her vision and tireless energy brought ndia into the era of self-reliance", the resolution dded. Index, appended to it, is of great assistance) the thought content of this research work

Every event in the life of Indira Gandhi was worth emembering. This book puts them all in a faithful equence. There is a list of Honours granted to her posthumously all over the world. The author has woven together the various adorations, applauses ionours, and condolences in a very readable manner The gazette notification of November 7, 1984 issued by the Government of India recalled Mrs Gandhi's statement the evening before her assassination · "Even if I die for the service of the nation, I shall be proud of it Every drop of my bood, I am sure, will contribute to the growth of this nation and make it strong and dynamic" Such was the glow of this charismatic lady who did so much for the uplift of her people and became a world statesman of reck-oning

The get-up of the book is attractive It commends itself in the shelves of libraries, to inspire as well as help those interested in an indepth study of this towering personality

Navin Chandra Joshi

Builders of modern India

RAFI AHMED KIDWAI by Dr. M Hashim **Kidwai. Published by Publications Division (Ministry of Information and Broadcasting) Patiala House, New Delhi-1, pp. 228 Price Rs. 20 50**

"Politicians are usually in disrepute They are considered to be vain, shallow and unprincipled Many of them are corrupt, debunked and are decried because of the way they talk, the way they deal with the people and the way they go ahead with their business. They make promises, they do not and cannot fulfil them. They make people bitter "thus opines the author of the book under review

But Rafi Ahmed Kidwai was a breed apart. Ploughing a lonely furrow he was a roly-poly man with a pronounced sense of humour, not evident in other politicians. He loved to hold darbars, where there was much tittle-tattle but not of a malicious, kind. Helpful and kind to all those who fought against the British regime, he did not restrict his generosity only to members of the Congress. Devoted to the secular ideals set for the country by Mahatma Gandhi and the objective of socialism defined by Jawaharlal Nehru, he created a band of 'Rafians' as they were known, to combat the intrusion of communalism in the Congress Party.

Kidwai's term as a Minister in the Union Cabinet will be associated with two events—as Minister of Agriculture, he withdrew rationing while as Minister of Communication, he introduced the all air-up distribution of mail Kidwai's style of functioning was highly personal. He would suddenly disappear from wherever he was staying and turn up just as suddenly at some other place. He kept his house open and gave a patient hearing to all those who had complaints against the government's non-performance. He died suddenly while in office but not without leaving such stalwarts as Feroze Gandhi who was also a genial person

The book, under review is a laudable attempt by an admirer and devotee of Rafi Sahib, as also with impeccable credentials to do so If the object of the Builders of Modern India Series is to record, for the present and future generations the story of the struggles and achievements of the great sons and daughters who have been instrumental to our national renaissance and the attainment of Independence, then it more or less fulfils its avowed purpose.

The author gives a vivid account of Rafi Ahmad Kidwai who was devoted to the service of the Indian nation—a true representative of the Indian composite culture and one of the stalwarts of the freedom struggle who with every ounce of his strength helped the infant free India grow into a strong republic. In fact, peerless and unparalleled is the contribution of Rafi Sahib as a crusader for national freedom, as a statesman and as an able administrator—all rolled into one

Planned and written as a handy volume, the book gives a brief account, albeit in simple words, of the life and activities of the eminent leader of his times. Yet, it is not intended to be comprehensive or to replace the more elaborate biographical sketches on the subject The intermingling of serious comments and subtle humour relieves the excess of worlds. Modestly priced, the book could become the envy and proud possession of every library, although there is no pictorial relief to go which might have been more appropriate as a low-priced paper-back.

N D. Batra

Reserved for Readers

Small scale industry

The article 'Nehru and planned developed' (Nov. 1-15) underlined very loudly the contributions of Nehru's leadership, under which the government took many vital measures aimed at eliminating the economic backwardness of India. The first step in this direction was the introduction of Planning Commission. His emphasis on large scale industry was not less significant. But how far this policy is helping India nowadays ?

Small-scale industry's influence on the entire course of the country's economic development stems, above all , from the fact that it economises capital resources and mobilises labour resources. In other words, on one hand, it helps to eliminate unemployment and part time employment, and on the other, does away with the shortage of goods. Consequently, at the present stage, the extensive development of the Indian economy through the expansion of small scale industry is an absolute necessity.

From the point of view of the national economy, it is no less effective, and within certain limits it is even more progressive than a one-sided orientation on the growth of large-scale industries. In the present circumstances the only correct development strategy that could ensure the maximum progress of the economic system as a whole is that of finding the optimal combination of the small scale and large-scale industries. As far as the social factors are concerned the orientation on the accelerated development and modernisation of the small scale industry, and its sectoral technological and social restructuring are exceptionally important

Anjani Kumar
Kirori Mal College, Delhi

Social Forestry

It is a matter of great satisfaction that the importance of 'forest and environment' have been well realized by all the sections of the society. Many State Governments have taken up massive Social Forestry programmes. However, there is great need that all the sections of the people should be involved to participate in this national programme to get good results It will be quite useful, if the Central Government publishes a monthly journal on 'Social Forestry' in English, Hindi and regional languages, so that all sections of the society and laymen could actively participate in this useful national programme

K. S Bhatia
Bhopal

Plan or perish

Planning for prosperity has a vital role to play in any society which is struggling against want. This process has to initiate at Family level. Family Planning concept should encompass all activities—population control, health standards, educational objectives and economic goals.

Man may not be able to do much to avert natural calamities like earthquakes, cyclones, etc., but given the will, he can certainly limit family size, maintain good health, learn new techniques and earn more. All this is in our own hands to add to good living.

Emphasis is necessary to keep in check the quantity of human resource, but greater care is needed to improve the quality of this primary resource. Quality education can be of great assistance towards this end because it results in a better awareness in budding citizens.

With the already scarce resources, their optimisation assumes significance. Very useful resources are stagnating at many places whereas these could be of immense use in the development process. Such imbalances are glaring in a household of even bigger units.

Could we make the most of our resources to provide plenty and ensure quality of life

R. L. Kaul
Himachal Pradesh

Energy

Your issue on Energy (Nov 1-15) was really excellent and research oriented.

Few issues in today's society have been the source of such extensive debate and conflict as the question of future energy supplies Even in the industrialised countries, widespread awareness of the need for the transition from an oil based energy system has led to increased demand for developing viable alternative sources of energy within a relatively short period of time Bio-energy, or the energy from the living organisms, is the choice of energy for a finite and crowded world A comprehensive energy story recently published by the International Institute for Applied Systems Analysis (IIASA), which is a first truly global and long range examination of the world's future concludes that Biomass and other renewable energy sources, if exploited fully, would yield energy comparable to fossil fuels, solar energy and nuclear power by AD 2030.

Bio energy and biomass are embarassing words to many of us though cognizance of energy potential of woods, wastelands, sewage and garbage is fast catching up. The magic of biomass is that locked within every shred of it—whether sugarcane or sewage—is energy

Himanshu Misra
Regional College of Education Ajmer

Special measures for education among women

SPECIAL MEASURES *have been taken to encourage education among* women and girls. These measures have also been spelt out in the Programme of Action for implementation of the National Policy on Education. The measures are :

(i) Under the Scheme "Reimbursement of Tuition fee charged from girls in classes IX-XII to States/Union Territories," reimbursement is being made for making education free for girls in classes IX-XII.

(ii) To encourage literacy among women, particularly in rural and tribal areas, in the age group 15-35 the State Governments/Union Territorries have been requested to ensure that at least 50% of the learners in the adult education centres are women; and the scheme of assistance to voluntary agencies working in the field of adult education has been modified to make such agencies eligible for grant-in-aid even if they run only 5 centres, as against the general minimum of 15 centres.

(iii) For increasing girls' enrolment the ongoing scheme of non-formal education, under which financial assistance is given to educationally backward states, has been liberalised and the central assistance is now provided on 90:10 basis for establishment of Non-Formal Education Centres exclusively for girls. □

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Transforming wasteland into greenland

ACCORDING TO THE SEVENTH PLAN document more than half of the total land area of 328 million hectares is estimated to be in various stages of degradation and approximately 50 million hectares are not being put to any productive use for different reasons. With a view to reversing the trend of continuing deforestation a National Wasteland Development Board is functioning. The Board formulates, within the overall National Policy, perspective plans and programmes for the management and development of the wastelands in the country through a massive programme of afforestation and tree planting. It is also to promote, encourage and finance development of wastelands through the involvement of non-governmental organisations, voluntary agencies, and the public at large, including the landless. In short, a people's movement for afforestation is envisaged.

The overall achievement in afforestation, through social forestry, farm forestry and other schemes, during the year 1984-85 was a total of 253.30 crores seedlings planted. For the year 1985-86, the target for planting Seedlings was fixed at 281.46 crore. Against this a total of 302.01 crore seedlings were planted thereby well exceeding the target. Thus there has been a marked progress in the afforestation effort. The plantation is estimated to have gone up from 12.6 lakh hectares in 1984-85 to about 15 lakh hectares in 1985-86. According to the "Annual Plan 1986-87", recently released by the Planning Commission, the physical target for afforestation will be 342.85 crore seedlings to cover an area of about 18 lakh hectares in 1986-87.□

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